Michelle, Kayce (UTC)

From: John Daily [redacted@pdx.edu]
Sent: Friday, August 27, 2010 10:12 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

John Daily
[redacted] SW Mapleridge Drive
Portland, OR 97225

Michelle, Kayce (UTC)

From: repar [[redacted]@saw.net]
Sent: Friday, August 27, 2010 10:59 AM
To: EFSEC (UTC)
Subject: Whistling Ridge DEIS comments-transport-Repar-4
Attachments: Comments_DEIS_Transportation_27Aug2010.doc

Importance: High

Dear EFSEC,
Attached, please find my comments on Transportation as regards the Whistling Ridge project.
Thank you.

Mary J. Repar
[redacted] E. Loop Rd. [redacted]
Stevenson, WA 98648
Tel: 509.427.[redacted]
E-mail: [redacted]@saw.net
"Life is not measured by the number of breaths we take but by the moments that take our breath away."

Mary J. Repar
[redacted]**E. Loop Rd.,** [redacted]
Stevenson, WA 98648
Tel: 509.427.[redacted]

27 August 2010

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e-mail: [redacted]@commerce.wa.gov

BPA
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P.O. Box [redacted]
Portland, OR 97293-4428
Toll-free comment line: 800.622.[redacted]
FAX: 503.230.[redacted]
503. 230. [redacted]
www.bpa.gov/comment

Re: The Whistling Ridge DEIS and the inadequacy of the data and analyses for impacts to transportation in the region

Dear EFSEC and BPA,

I am greatly concerned about what I feel is a very inadequate analysis of the actual impacts to our roads and byways by the transport of the wind turbines and other construction paraphernalia for the Whistling Ridge wind farm project. The "specialized" trucks that are needed would, I believe, create havoc on our roads and there would also be serious damage to our rural, scenic public roads. The whole issue of which roads SDS would actually use if this wind farm is approved, has not been adequately addressed in the DEIS. Skamania County authorities also fail to address impacts to our roads and byways from all the over-weight traffic for this wind farm proposal. Waiting to figure it all out after the fact is not good public policy and it certainly is not public disclosure.

I needed to educate myself on this issue and the following disturbing information is about what it really takes to transport wind turbine components. My emphasis is in **bold red.** The following is an article on what makes wind energy possible:

http://www.go-explore-trans.org/2009/nov-dec/wind_turbines.cfm

Trains, trucks, and ships make wind energy possible

by Katie Greenwood

Imagine yourself in a flat, wide-open field. Next to you, extending about 400 feet into the air is a wind turbine. Its 3 gigantic steel blades whoosh around and around hundreds of feet above your head.

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27 August 2010

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by Katie Greenwood

Imagine yourself in a flat, wide-open field. Next to you, extending about 400 feet into the air is a wind turbine. Its 3 gigantic steel blades whoosh around and around hundreds of feet above your head.

A wind farm in Kansas
Photo courtesy: Brent Danley via flickr

Standing next to a wind turbine, you can witness the incredible power of the wind to move this massive machine.

But before the wind could move the turbine, something else had to move it first.

Trucks, ships, and trains move wind turbines from the factory to the wind farm. A wind farm is a group of wind turbines in the same location used to produce electricity. (Wind farms are also called wind power plants.)

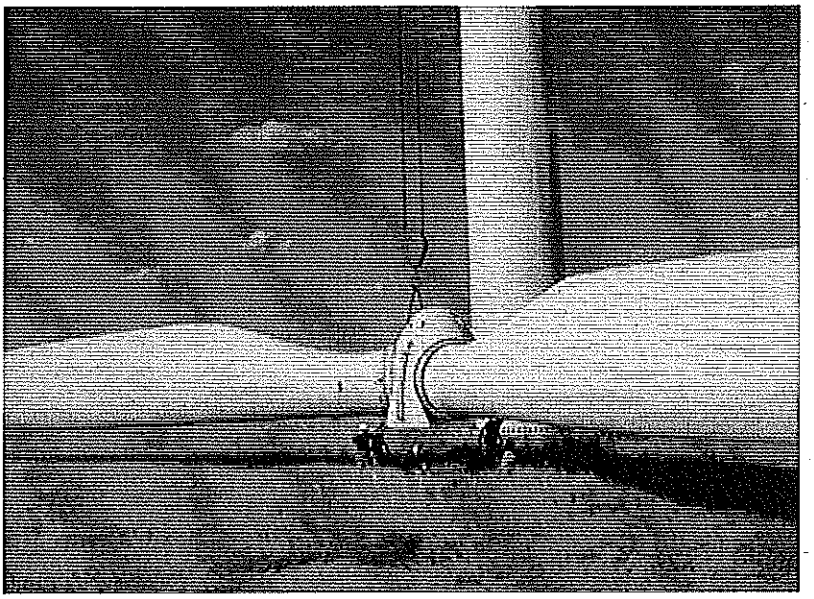
In the United States, Texas and Iowa have the greatest number of wind farms because flat plains are the best sites for wind farms, but **many turbines come from factories outside of the United States.**

Just how big are they?

Wind farms range in size from a few dozen to 421 turbines. **A single turbine is transported in up to 12 pieces.**

Wind turbines are manufactured and shipped in several parts, and each part is huge.

The tall, vertical piece is called the tower. It's usually made in 3 parts but sometimes more.



A crane lifting the huge blades and hub of a wind turbine
Photo courtesy: rockymountaincrane.com

Each section of the tower is about 120 feet long and weighs up to 70 tons. An empty semi-truck and trailer weighs about 15 tons.

Attached to the top of the tower is the nacelle. The nacelle houses the generator, power electronics, and the gears that turn the wind into electrical energy. **Nacelles weigh 50–70 tons.**

Most turbines have 3 blades that are attached to the nacelle by the rotor hub. Some blades are up to 50 yards long. **A 3-blade rotor hub can almost cover a football field!**

Curriculum connection

Using geometry in a transport route survey

Before construction of a land wind farm can begin, route planners consider several possible trucking routes for the turbines.

Route planners study several factors including traffic, road construction, surrounding buildings, and environmental issues to determine the best route.

With the help of a surveyor, the route planner **assesses the steepness of hills and inclines along the route.** A surveyor can take the necessary measurements using a transit.

Students practice using
a surveyor's transit.

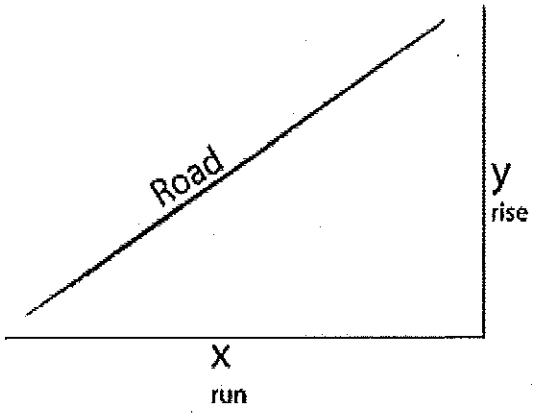
The steepness of a road's incline is called the *grade*. **Turbines can safely ascend and descend grades of less than 15%.** Steeper grades **can potentially lead to accidents that damage turbine parts or cause erosion of the soil and structure beneath the road.**

If the surveyor assesses the grade at greater than 15%, it may be necessary to level the roads or put in erosion control measures for that part of the route.

Getting the grade

How do they get the grade?

The illustration below shows a highway in profile. Notice that a right triangle has been constructed in the diagram.



An illustration of the the verticle and horizontal distances of an inclined road.

The bottom of the triangle is the horizontal distance a particular section of highway covers. This horizontal distance, or the "run" of the highway, indicates how far a vehicle would travel on the road if it were level.

The "rise," or vertical distance, is a measure of how much higher a vehicle is after driving along the road. To find the "rise," the surveyor must determine the difference in elevation from the bottom of a slope to the top.

Putting it together

Similar to calculating the slope of a line in your geometry class, calculating the incline of a road is simply "rise over run."

Slope is the measure of the vertical rise in the road divided by the horizontal distance or:

$s=y/x$

Grade is the slope expressed as a percentage. To find the percent, the slope is multiplied by 100.

$G=100s$

Try it out: If a highway rises 375 feet over 1 mile, is the grade safe for trucks hauling turbine components?

Check your answer.

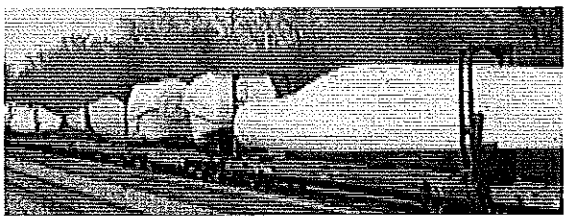
So to build even small wind farms, there are many large loads that must travel long distances.

How in the world are these hulking parts moved?

The type of transportation used depends on the location of the wind farm. Often, a combination of transportation modes is used for each wind farm.

By train

A large number of turbines manufactured in the United States are first transported by train, according to Dr. Nadia Gkritza, who is currently researching sustainable energy and transportation systems at Iowa State University.



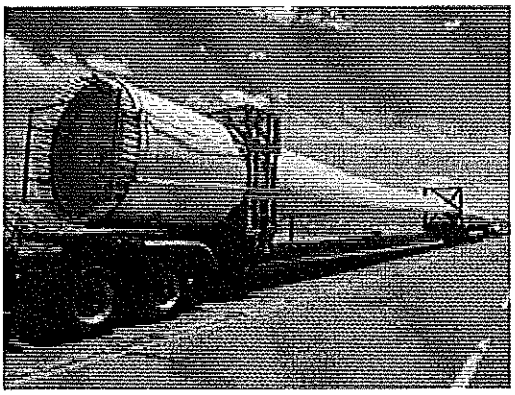
A single train can haul 50–70 cars of wind turbine parts. *Photo courtesy*: kedziers via flickr

A single train can haul 50–70 cars of wind turbine parts. It costs less to move turbine parts by train because more can be moved at a time, but the train routes **must avoid low overpasses** when hauling the large components.

But since trains don't directly connect to the wind farms, the final transportation leg must be done by truck.

By trucks

Trucking has been the most common method of transporting turbines because trucks can go directly to a wind farm.



Each wind turbine requires 8–12 semi-truck trailers. Many turbine loads weigh more than 100,000 pounds. *Photo courtesy*: Bill Weaver via flickr

Transporting by truck requires 8–12 trailers for each turbine.

Hauling the oversized loads requires a permit from the state Department of Transportation. The trucks must follow paths that avoid road construction, low bridges, and busy city centers. **Often, trucks have to take a long route to their destination when transporting turbines.**

Many wind farms are located within crop farmland. **This means that these heavy** parts travel on narrow, unpaved roads that are not designed to accommodate the heavy loads. Immediately after a wind farm is completed, **maintenance workers must repair and level the roads.**

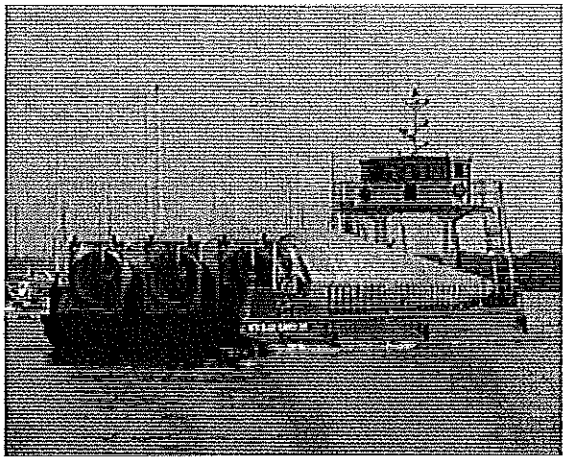
Highways and interstates can handle about 80,000 pounds. Many turbine loads weigh more than 100,000 pounds, so transporting turbines can cause damage to even these roads over time.

By ships

When turbine components come from overseas, they are imported in several shipments. Each ship carries only 1 type of component.

When Vestas imported 60 turbines into the Port of Longview in Washington, **all the components arrived in 5 shipments.** The towers **arrived in 3 separate shipments followed by 2 shipments of nacelles and blades.**

The fragile loads must be packed tightly but carefully to avoid damage. Safety must also be considered to avoid interfering with the ship's stability and navigation.



Ships and barges don't have to negotiate tight turns or avoid overpasses like trucks and trains. *Photo courtesy*: GrahamAndDairne via flickr

There are specific ways of lashing and securing the parts to the ship. When shipped long distance, blades are shipped in transport containers to keep them from shifting around.

As wind energy technology advances, new wind farms are being erected off shore. An offshore wind farm in Nantucket Sound, Massachusetts, is scheduled to begin in 2010. The project is being called Cape Wind.

One advantage to transporting by ships and barges: **they don't have to negotiate tight turns or avoid overpasses like trucks and trains**.

Learn More

The American Wind Energy Association offers an excellent wind energy tutorial that discusses the basics of wind power.

Katie Greenwood is a writer for *Go!*.

Go! is brought to you through the generous donations and grants of our sponsors, including these platinum-level sponsors: the Iowa Math and Science Education Partnership, the Federal Highway Administration, and the Midwest Transportation Consortium.

Learn more about all our sponsors.

IOWA STATE UNIVERSITY
Institute for Transportation

In conclusion, some of the issues and disturbing facts about what it really takes to transport and build a wind farm:

- many turbines come from factories outside of the United States;
- **A single turbine is transported in up to 12 pieces;**
- **Each section of the tower is about 120 feet long and weighs up to 70 tons.** An empty semi-truck and trailer weighs about 15 tons;
- **Nacelles weigh 50–70 tons;**
- A 3-blade rotor hub can almost cover a football field!;
- Route planners study several factors including traffic, road construction, surrounding buildings, and environmental issues to determine the best route; assesses the steepness of hills and inclines along the route;
- **Turbines can safely ascend and descend grades of less than 15%.** Steeper grades **can potentially lead to accidents that damage turbine parts or cause erosion of the soil and structure beneath the road;**
- If the surveyor assesses the grade at greater than 15%, it may be necessary to level the roads or put in erosion control measures for that part of the route;
- So to build even small wind farms, there are many large loads that must travel long distances;
- A single train can haul 50–70 cars of wind turbine parts. It costs less to move turbine parts by train because more can be moved at a time, but the train routes must avoid low overpasses;
- Transporting by truck requires 8–12 trailers for each turbine;
- Often, trucks have to take a long route to their destination when transporting turbines;
- Many wind farms are located within crop farmland. **This means that these heavy** parts travel on narrow, unpaved roads that are not designed to accommodate the heavy loads. Immediately after a wind farm is completed, **maintenance workers must repair and level the roads;**
- Highways and interstates can handle about 80,000 pounds. Many turbine loads weigh more than 100,000 pounds, so transporting turbines can cause damage to even these roads over time;
- When turbine components come from overseas, they are imported in several shipments;
- When Vestas imported 60 turbines into the Port of Longview in Washington, **all the components arrived in 5 shipments.** The towers **arrived in 3 separate shipments followed by 2 shipments of nacelles and blades;**
- One advantage to transporting by ships and barges: **they don't have to negotiate tight turns or avoid overpasses like trucks and trains.**

Analysis on grades and transportation requirements is totally inadequate in the DEIS. The Whistling Ridge proposal involves grades ranging from 5% to 70%. More expert survey data is needed for the DEIS. More analysis and data is needed on just how much the transport trucks and the wind infrastructure materiel actually weigh and how much damage they might do to our rural roads and byways. And, I think we all need to know just how SDS really proposes to get these huge, heavy, and unwieldy turbines up steep slopes that are prone to

erosion and mass wasting! **(Mass wasting and soils will be addressed in a separate memo.)**

The DEIS is totally inadequate on the transport issue. Thank you.

/e-signature/**Mary J. Repar**
27 August 2010

Michelle, Kayce (UTC)

From: repar [redacted]@saw.net]
Sent: Friday, August 27, 2010 11:04 AM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge-cap and flex-Repar-5
Attachments: Comments_DEIS_BPA_capacity and flexibility_27Aug2010.doc

Importance: High

Dear EFSEC,
Attached, please find my 5th memo, on BPA capacity and flexibility, for the Whistling Ridge wind farm proposal. Thank you.

Mary J. Repar
[redacted] E. Loop Rd [redacted]
Stevenson, WA 98648
Tel: 509.427.[redacted]
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Re: Comments on the inadequacy of Whistling Ridge DEIS in regard to the integration of wind power into the power grid; backup sources for wind when there isn't any; wind powers effects on the energy grid, etc.

Dear EFSEC and BPA,

I would like to further address the issue of wind power generation in the Pacific NW and the fact that "wind generation needs back-up, flexible sources to handle unexpected changed in its output." I have made comments in the memo entitled Comments_DEIS_Chap. 3_Environment_Impacts_Mitigation_27Aug2010, but in this document I would like to go further in depth about my concerns that were not addressed in the Whistling Ridge DEIS, concerns that I feel BPA should have addressed in the DEIS and they did not. The document that helped to crystallize my concerns about the lack of information on wind power integration and the integration of wind power into the energy grid, is the Sixth Power Plan done by the NW Energy Council, and the document is located at
http://www.nwcouncil.org/energy/powerplan/6/final/SixthPowerPlan_Overview.pdf.

My comments are ***bolded and italicized, located after sections upon which I wish to comment.*** Most of this information was not included in the DEIS and it should have been part and parcel of the discussion. Its lack of inclusion is a fatal flaw in the DEIS and should be addressed by BPA, SDS, and EFSEC. I have not included the entire document. The document is in quotation marks:

"As a result, planners must now consider potential resources in terms of their **energy, capacity, and flexibility contributions. The rapid growth of wind generation (which has little capacity value and increases the need for flexibility reserves) means that**

meeting growing peak load and flexibility reserves will require adding these capabilities to the power system. Changes can be made to the operation of the power and transmission system that will reduce flexibility reserve needs. These operational changes are expected to cost less than adding peaking generation, demand response, or flexibility storage, and they can be implemented more quickly. **Wind generation needs back-up, flexible resources to handle unexpected changes in its output.**

Comment: Wind power has "little capacity value and increases the need for flexibility reserves" which basically means that wind power needs backup sources, which means coal-power, gas plants, hydro power, or some other sources. Sources which probably contribute more CO2 to the environment. The DEIS does not address the issue of the unreliability of wind, the lack of storage capacity in wind power, and the need for backups to the power system to balance or leaven the production of wind energy. Why isn't this information in BPA's portion of the DEIS? Oh, I forgot. BPA didn't contribute very much pertinent energy production and infrastructure information to the DEIS so that's why we don't have all the information needed to make a thoughtful and studied decision about the feasibility or desirability of this wind farm proposal! How much flexibility and capacity will have to be added to BPA's energy production in order to balance wind power?

While the problems appear daunting, particularly in integrating new wind generation with a more constrained hydrosystem, there are solutions. The first step is to change system operating procedures and business practices to more fully utilize the inherent flexibility of the existing system. The Council believes these changes will be significantly cheaper to achieve, and can be implemented sooner than adding additional generating capacity solely to provide flexibility. It will also set the stage for determining how much flexibility will ultimately be needed from new generation.

Actions for these operating and business practice changes include: **establishing metrics for measuring system flexibility; developing methods to quantify the flexibility of the region's existing resources; improving forecasting of the region's future demand for flexible capacity; improving wind forecasting and scheduling; transitioning from the current whole-hour scheduling framework to an intra-hour scheduling framework; and increasing the availability and use of dynamic scheduling. Fully implementing these improvements may also require physical upgrades to transmission, communication, and control facilities, though the cost of these upgrades is expected to be relatively small compared to the cost of adding new flexible capacity.**

Comment: What are the metrics for measuring system flexibility? What are the methods to be used to quantify the flexibility of the region's existing resources? How will BPA improve forecasting of the region's future demand for flexible capacity? How will BPA and the wind industry improve wind forecasting and scheduling? How will BPA transition from current whole-hour scheduling to intra-hour scheduling? How will BPA increase the availability and use of dynamic scheduling? What is dynamic scheduling? Will it cost the rate payers more money to implement all of these

efforts to integrate unreliable wind power into the existing power grid? If physical upgrades to transmission, communication, and control facilities will be required, what are the costs going to be? To the regional rate payers? Tax payers? What are the cumulative regional impacts of the existing transmission lines? What would be the future cumulative impacts of new transmission lines? Where would these new transmission lines be located? How big would they be? How would they affect wildlife and wildlife habitats? Habitat fragmentation? These are only some of the questions that BPA should have addressed in the Whistling Ridge DEIS. They did not and this is a fatal flaw in the DEIS.

The Northwest Resource Adequacy Forum, jointly chaired by the Council and Bonneville, with participation by other regional utilities and interest groups, has devoted considerable effort over the past several years to reaching an understanding of the hydrosystem's sustainable capacity value. The work of the forum is described more fully in Chapter 14.

Comment: So Bonneville, which is BPA, sits on the Northwest Resource Adequacy Forum, and they have "devoted considerable effort...to reaching an understanding of the hydrosystem's sustainable capacity value." Care to share with the rest of us, BPA? What is the sustainable capacity value of our hydrosystem? How much sustainable capacity does BPA actually have? If there is too much capacity, from all these regional wind farms, does it become unsustainable? What happens to unsustainable capacity? Does too much capacity affect the BPA infrastructure? How is the infrastructure affected if capacity reaches unsustainable levels? Are there inherent dangers in unsustainable capacity? Dangers to the BPA infrastructure? Dangers to the general public and energy users? These questions, and many more relevant ones, should be addressed in the DEIS, by BPA. They are not. A fatal flaw.

Wind generation capacity also raises capacity issues because it is not controllable. Wind generation is variable; operators can reduce generation when the wind is blowing, but they cannot make it produce more, even if the rated wind capacity is much higher. **Furthermore, the output level is relatively unpredictable and, in the Northwest, is unlikely to be available at times of extreme peak load--for example when load is high because of a winter cold spell or a summer hot spell.**

Comment: If wind generation is not controllable, why is the Federal government subsidizing the wind industry? Why aren't we using our monies to work on conservation and raising efficiencies in the ways that we now use energy? If "the output level is relatively unpredictable and, in the Northwest, is unlikely to be available at times of extreme peak load...a winter cold spell or a summer hot spell" why are all these wind farms being built? Probably because they are highly subsidized by taxpayer money, and the producers get tax credits which they use for God knows what, but they are tax credits. Why are we spending so much money and effort on wind if it won't be available to cool us in summer and warm us in winter because wind is uncontrollable, variable, and unpredictable? These questions should be answered in the DEIS. There should be a rationale, by the proponents, as to why they are proponing for this wind

farm, and all the others in WA and OR and other areas. If wind is variable, then how is BPA going to balance the power generated by wind turbines? How is BPA going to maintain its flexibility and consistency of power production if wind is so variable, unpredictable, and uncontrollable? More questions that should be answered in the DEIS.

The amount of installed capacity expected to be available during peak-load hours is often called a generator's "peak contribution" or "reliable capacity." There is a body of technical literature on methods for the calculation of this value. **Analysis done by Bonneville and the Resource Adequacy Forum suggests that, for the wind area at the east end of the Columbia River Gorge, where much of the region's current wind generation is located, there is an inverse relationship between wind generation and extreme temperatures, both in winter and summer.** This is likely due to widespread high pressure zones covering the region's load centers (the biggest ones being west of the Cascades) and the area of wind generation east of the Cascades during periods of extreme low and extreme high temperatures. Figure 12-1 illustrates **the loss of wind generation during a recent winter period.** While efforts to better define the reliable capacity of wind generators are ongoing, both in the Northwest and in NERC and WECC, **the Resource Adequacy Forum has adopted a provisional peak contribution for wind of 5 percent of installed capacity.** This work will need to address the impact of future wind development in other areas, such as Montana and Wyoming, that may have different weather patterns and could improve the overall capacity contribution of wind.

Comment: So, analysis done by Bonneville and the Resource Adequacy Forum "...suggests that, for the wind area at the east end of the Columbia Gorge, where much of the region's current wind generation is located [as is the Whistling Ridge proposal] there is an inverse relationship between wind generation and extreme temperatures, both in winter and summer." Well, gosh darn, does this mean that when it's really hot, like in the summer time, there is less wind and therefore there is less wind power generation and therefore less energy is available for cooling? Summer time also means less water in the Columbia River and that means less water available to BPA for power generation. And, in the winter time, when it is really cold there is less wind power generation available to heat our homes and businesses? Why aren't these issues and concerns addressed in the DEIS? When we most need energy is when it is not being produced. Hmm, that does not make sense. Common sense, that is. Why are we even subsidizing more wind farms? Further, "the Resource Adequacy Forum has adopted a provisional peak contribution for wind of 5 percent of installed capacity." Does this mean that all the wind farms that litter the landscape only produce, and WILL ONLY PRODUCE and are ONLY CAPABLE OF PRODUCING, "5 percent of installed capacity"? This is a stunning statement. Whole ecosystems are being destroyed by wind turbines, pads, and impermeable maintenance roads that criss-cross our environments and ecosystems, and these wind farms will ONLY PRODUCE "5 percent of installed capacity"?!? Well, I would be speechless if this didn't make me so angry. This stunning analysis MUST be part of the DEIS and must be addressed in the future. A deep fatal flaw in this very inadequate, and getting more inadequate by the minute, DEIS.

Adding Flexible Capacity

System planners and operators are looking at resources that can be used to meet peak-hour demand and respond to **variations in wind output.** These flexible-duty resources do not necessarily need to generate large amounts of energy over the course of the year. **Resources typically placed in this category include: rapid-response natural gas-fired generators; storage resources such as pumped-storage hydro plants; and utility demand response programs.** ***In the near term, natural gas-fired turbines and reciprocating engines*** appear to be good options for meeting the increased demand for flexibility. To offset unexpected changes in wind output, these resources need rapid-start capability and efficient operation at output levels less than full capacity.

Comment: So, now we have come to the crux of the wind generation matter—wind is not a reliable source of energy and needs backup from "natural gas-fired generators; storage resources such as pumped-storage hydro plants; and utility demand response programs…natural gas-fired turbines and reciprocating engines appear to be good options." What is the carbon footprint of these backup systems? If I recall correctly, pumped-storage hydro plants are really reservoirs at high elevations to which water is pumped uphill, stored, and then released to go downhill and produce power through turbines. What are utility demand response programs? What are the cumulative regional impacts of these backup systems? These questions and issues should be addressed in the DEIS and are not. The DEIS is supposed to be a document that contains information so that we can all make reasoned, objective decisions about the proposed project and its regional cumulative effects. This DEIS is by no means that type of document.

The LM6000 Sprint (50-megawatt) and LMS100 (100-megawatt) aeroderivative turbines are two good candidates for flexibility augmentation. Starting cold, both turbines can be ramped to their maximum output within 10 minutes. These aeroderivative turbines are more efficient than comparable frame turbines, and therefore more cost-effective to operate at partial output levels. The LM6000 Sprint is a commercially mature technology with more than 200 units in operation. The first LMS100 unit went into commercial operation at the Groton Generating Station in South Dakota in 2006.

Comment: These "two good candidates for flexibility augmentation" sound good. But what is their carbon footprint? How do they affect the environment? Do they cause air pollution? Could we achieve better energy-saving results through conservation and increasing our efficiencies capabilities?

Gas-fired reciprocating engines are also a good flexibility option. The Plains End Generating Facility in Colorado is a 20-unit plant that has an output range of anywhere from 3 megawatts to 113 megawatts. The engines have a 10-minute quick start capability and can ramp up and down in response to an AGC signal. All of the above options can be constructed with short lead times, and therefore are good near-term flexibility options. A

more complete description of these natural gas-fired generating technologies is provided in Chapter 6.

Comment: Gas is a hydrocarbon. Hydrocarbon use produces greenhouse gasses. Greenhouse gasses are known to cause global climate changes. Using "gas-fired reciprocating engines" will produce greenhouse gasses. What is the carbon footprint of these gas-fired reciprocating engines? How many of them would be needed to balance out the unpredictability of wind power generation? What is their cumulative impact on air and water quality?

Pumped-storage hydro is a good mid-term option for meeting increased demand for flexibility since it can quickly change its operating level. These hydro plants operate in either a pumping mode or a generating mode. Traditional operation of pumped-storage hydro is based on the price of electric power. When the price of electric power is low, water is pumped from a source to a storage reservoir located at a higher elevation. When the price of electric power is high, the stored water is released and passed through a turbine to generate power. **As more wind power is added to the system, pumped-storage operation is likely to respond to the price of regulation and load-following services**. For example, operators of pumped-storage plants can commit in advance to increase pumping when there are unexpected increases in wind output. Plants with variable-speed pumps are likely to be more responsive in these circumstances. Likewise, operators can also commit to increase generation when wind power output unexpectedly drops. Furthermore, operating the plant in this manner is not likely to result in dramatic operating cost increases or reduced revenue. However, with a 13-year construction lead time, and high capital cost, risk is high. Other options may capture a large share of the ancillary services market before a new pumped-storage plant can be brought on-line.

Comment: Well, I don't want to burst anybody's bubble of happiness, but where are you all planning on getting the water that's necessary to produce pumped-storage hydro power? There is no chance on this green Earth that any water is coming out of the Columbia River. There are already too many users and abusers feasting on the Columbia. This is probably a non-starter idea. But, it should have been addressed in the DEIS. BPA's failure to do so is irresponsible.

The potential use of hot water heaters, plug-in hybrid vehicles, and other demand response options to provide regulation and load-following services is described in Chapter 5, Appendix H, and Appendix K."

Comment: The DEIS should have included a section on other ways and means of conserving and producing energy, as a contrast to wind power generation. BPA should more fully explain how our Pacific NW energy demands can be met by means other than wind power. They should also explain why this proposed wind farm is needed, or if it really is needed, in the energy grid.

Source document:
http://www.nwcouncil.org/energy/powerplan/6/final/SixthPowerPlan_Overview.pdf

/e-signature/**Mary J. Repar**
27August 2010

Michelle, Kayce (UTC)

From: Stephen Amy [[redacted]@yahoo.com]
Sent: Friday, August 27, 2010 11:19 AM
To: EFSEC (UTC)
Subject: A comment on the proposed Whistling Ridge energy project

I am writing to submit a comment on the proposed Whistling Ridge energy project.

I believe wind power will be an essential and large part of the future mix of energy sources, and generally do support wind projects, but I also think that each site that has been proposed for a project must be evaluated according to local criteria.

I've heard that the Whistling Ridge project site is located in very important northern spotted owl habitat; and, considering the continuing decline of the spotted owls, this argues strongly against citing the project.

Also, a significant and large area of the Columbia Gorge National Scenic Area will have sightlines negatively affected if the project goes ahead.

Therefore, I ask that the State of Washington deny the proposal.

Stephen Amy
[redacted] SW Hall Blvd. [redacted]
Beaverton, OR 97008

Michelle, Kayce (UTC)

From: repar [redacted]@saw.net]
Sent: Friday, August 27, 2010 12:02 PM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge-Land and Soils-Repar-6
Attachments: Comments_DEIS_Land_Soil_27Aug2010.doc

Importance: High

Dear EFSEC,
Attached, please find what I think is my last comment memo on the Whistling Ridge wind farm proposal! I wish you all Good Luck! in evaluating all the comments that you have and will be receiving. Thank you very much for all that you do to keep us and our environments safe./Mary

Mary J. Repar
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Stevenson, WA 98648
Tel: 509.427.[redacted]
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"Life is not measured by the number of breaths we take but by the moments that take our breath away."

Mary J. Repar
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27 August 2010

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BPA
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P.O. Box [redacted]
Portland, OR 97293-4428
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Re: Regarding the inadequacy of analysis of impacts to land and soils from the proposed Whistling Ridge (WR) wind farm project in Skamania County, wind turbine size and weight, and geologic mass wasting, etc.

The Draft Environmental Impact Statement (DEIS) shows that the soils on the proposed Whistling Ridge wind farm site, 1152 acres located in Sections 5, 6, 7, 8, and 18 of T3N, R10E, and on Section 13 of T3N, R9E, are unstable and should not be disturbed through the building of this project, a project that would involve thousands of tons of ground movement and disturbance, with the addition of thousands of tons of concrete and wind turbines on top of this unstable soil. In reading the DEIS, it also came to my attention that the soil descriptions used by the proponent were not as complete and not as informative as the soil descriptions in the Soil Survey of Skamania County, Washington, done by the U.S. Department of Agriculture, Soil Conservation Service, dated October 1990. It is as if certain, very pertinent information was left out of the DEIS. I have attempted to put this information in this memo.

On p. 3-1, 3.1.1.2, Regional Geology, the DEIS states, *"Regional geologic maps indicate the presence of **Quaternary-age mass wasting landslide deposits located north of Underwood Mountain*** [my emphasis] *(Figure 3.1-2). These deposits are mapped as a large landslide, estimated to be approximately 1/3 square mile in area and almost a mile long. However, based on field work conducted in 2007, there is no obvious evidence to suggest the presence of a landslide as mapped on the 1:100,000 scale geologic map. If landslide deposits are present, they have been exposed long enough that most or all of the geomorphic evidence has been removed by erosion."* (p. 3-3) This is not an acceptable analysis. See Reference A, at the end of this document for more information on mass wasting but, briefly, "Mass wasting, the downhill movement of soil and rock under the influence of gravity, encompasses a variety of physical processes by which mountain ranges are eroded. These processes include:

- Creep - slow, nearly continuous downslope movement that is induced by either freeze/thaw cycles or wet/dry cycles.

- Slides - sudden downhill movement of masses of rock or sediment.
- Debris flows- dense, fluid mixtures of rock, sand, mud, and water

There are other categories of mass wasting processes such as slumps, rock flows, rockfalls, block glides (etc...) that can be grouped together or separately with creep, slides, and debris flows depending on which characteristics that share in common. **All of these processes share one thing in common, namely, that they are caused by the incessant downward pull of gravity, which moves loose slope material downwards.**" [my emphasis]

"*These deposits are mapped as a large landslide, estimated to be approximately 1/3 square mile in area and almost a mile long. However, based on field work conducted in 2007, there is no obvious evidence to suggest the presence of a landslide as mapped on the 1:100,000 scale geologic map. If landslide deposits are present, they have been exposed long enough that most or all of the geomorphic evidence has been removed by erosion.*" "No obvious evidence...If landslide deposits are present...they have been exposed long enough that most or all of the geomorphic evidence has been removed..."!!! These are astonishing statements, made without any type of real, geological evidence, i.e., a sub-surface hazard survey, drill holes, etc., in the DEIS. **An in-depth geological study should be made of the entire proposed site—before the project is approved, not after.** Geomorphic evidence of landslides does not just disappear—a near-surface hazard survey is a tool to find out just what is going on under the exposed, eroded surface. This has not, apparently, been done for this DEIS, and it should be. This proposed wind farm would be situated on top of a unstable ridge line, subject to mass wasting[1].

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[1] References:

A. **http://www.geology.wisc.edu/courses/g112/mass_wasting.html**

I. Physical and chemical weathering

Weathering is the destructive process by which rocks and minerals are broken down through exposure to atmospheric agents such as air, wind, water, and ice. Weathering processes can be grouped into two broad categories, consisting of

Physical weathering - the fragmentation of a larger rock into smaller pieces by mechanical processes. These processes include

- abrasion (erosion of a rock due to the impact of grains carried by wind, water, or ice)
- fragmentation during downslope movement via rockfalls, landslides, etc.
- frost wedging via the freeze/thaw cycle.
- thermal expansion and contraction via heating and cooling

Chemical weathering - breakdown of rock or mineral through reactions between rocks/minerals and atmospheric constituents such as water, oxygen, and carbon dioxide. The most common reactions include

- Solution - molecules and elements in rocks and minerals dissolve directly into water
- Oxidation and hydration - reaction between oxygen, water, and iron-bearing minerals that helps to break down minerals
- Hydrolysis - a complex weathering reaction that forms clays, the primary constituent of soils.

Ice and Physical weathering

The two principal mechanisms by which ice causes rock weathering (and erosion) are via **frost wedging** and **glaciation.**

- **Frost wedging** is the process by which water that has trickled into cracks in rocks (ranging from microscopic to large cracks) alternates between freezing and thawing. Frozen water (ice) occupies 10% greater volume than does its liquid equivalent. Water that freezes thus pushes outward on the sides of a fracture with tremendous force. This eventually breaks rocks apart.

- **Glaciation** - Glaciers are large masses of ice that rest on or adjacent to a land surface and typically move. Glacial ice forms when snow accumulates in deep enough piles (tens of meters) to cause individual snow flakes to recrystallize and form ice. Glaciers are extremely effective weathering and erosional agents. A glacier is capable of carving deep valleys into bedrock as well as scraping all loose material (soil and weathered bedrock) off from a landscape. In alpine regions, mountain glaciers are important elements in both weathering and erosion; most alpine mountain peaks have been shaped (or carved) by small mountain glaciers.

II. Mass wasting and gravity

Mass wasting, the downhill movement of soil and rock under the influence of gravity, encompasses a variety of physical processes by which mountain ranges are eroded. These processes include

- Creep - slow, nearly continuous downslope movement that is induced by either freeze/thaw cycles or wet/dry cycles.
- Slides - sudden downhill movement of masses of rock or sediment.
- Debris flows- dense, fluid mixtures of rock, sand, mud, and water

There are other categories of mass wasting processes such as slumps, rock flows, rockfalls, block glides (etc...) that can be grouped together or separately with creep, slides, and debris flows depending on which characteristics that share in common. All of these processes share one thing in common, namely, that they are caused by the incessant downward pull of **gravity**, which moves loose slope material downwards.

Gravity-driven mass wasting processes are a subset of larger set of processes that transport weathered and unweathered earth materials. These processes are classified as **erosional processes**, which include all processes that remove and transport weathered or unweathered soil and rocks. Erosional processes include

- Wind
- Running water
- Waves
- Glaciers
- Water flowing underground
- Gravity-driven processes (mass-wasting)

Mass-wasting processes

Mass-wasting processes such as creep, landslides, and debris flows are distinguished from each other in part by whether they occur rapidly or slowly. Landslides are capable of transporting massive amounts of rock and soil downslope for miles in very short periods (e.g. minutes). Creep can also transport much material, but at rates of only millimeters per year. Both are important erosional processes. **Rapid mass**

p. 3-7, 3.1.1.4 Geologic Hazards

Earthquakes

Earthquakes are the result of sudden releases of built-up stress within the tectonic plates that make up the earth's surface. Stress accumulates where movement between plates or on faults produces friction. No faults are mapped within the footprint of the proposed project area. However, faults are mapped approximately 1.5 miles to the southwest and northeast. (Pezzopane 1993 and Geomatrix 1995) Many of these faults are inferred, and shown as dotted lines buried by younger surficial deposits. While the activity of the area faults is unknown, a review of aerial photography showed no indication of recent movement along the trace of the inferred faults.

There have been no surface-rupture earthquakes on any fault within northwestern Oregon or southwestern Washington in historic times, and investigations of the regional faults have been limited.

According to the updated National Seismic Hazard Maps published by the US Geological Survey (USGS) in 2008 (Petersen et al. 2008 and USGS 2009), the peak ground acceleration estimated for the area of the Whistling Ridge site is 0.18g for a 475-year return period earthquake (i.e., ground motion with a 10 percent chance of being exceeded in 50 years) and 0.40g for a 2,475year return period earthquake (i.e., ground motion with a 2 percent chance of being exceeded in 50 years).

Large earthquakes at more distant faults could cause prolonged ground movement at the project site. Information on historic large earthquakes can be found in the Application for Site Certification Section 3.1 (Appendix A).

Landslides

The landslide evaluation conducted for the Application for Site Certification concluded that the project could be constructed and operated without danger to human life or the surrounding environment due to landslide hazards.

Although none of the proposed turbines are located within Class II LHAs, several of the towers along the western side of the project site (Tower Lines A and B) are located along ridgelines with descending slopes that are locally greater than 35 degrees (70 percent). Based on studies conducted for the Application for Site Certification, it appears that the primary concern for towers located adjacent to the Class II LHAs is the potential for headward erosion of the steep drainages by debris or earth flow processes. Erosion rates of these drainages are unknown, but no obvious recent mass wasting features were observed in the aerial photos or during the site

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wasting events such as massive landslides or debris flows are typically triggered by events that destabilize material that resides on steep slopes. Such events include earthquakes, volcanic eruptions, rain or melting snow, and **poorly planned landscape alterations by humans (e.g. road cuts or developments that require the removal of material at the bases of slopes).** [my emphasis]

reconnaissance. **Further subsurface investigation in support of final tower foundation design would help determine if there are weak rock or soil layers that could contribute to more deep-seated failure of the ridges and provide information on the quality of the rock underlying the ridgelines.**

The soils on the proposed wind farm site can be found in the U.S. Department of Agriculture's Soil Conservation Service's Soil Survey of Skamania County Area, Washington, October 1990. The DEIS descriptions are in ITALICS; other descriptions and information for each soil type is from the Soil Survey book (I have copied freely!). The soil types are numbered, as follows:

#66, McElroy Series (included in this unit are small areas of Chemawa, Timberhead, Underwood, and Undusk soils) gravelly loam, 5 – 15 percent slopes. "*The McElroy series consists of very deep soils (up to 5 feet) formed in colluvium and residuum from basalt with a mantle of volcanic ash that influences soils in the top 9 to 13 inches. The soils exist on the footslopes and backslopes of mountains on slopes from 5 to 90 percent at elevations from 400 to 2,600 feet in eastern Skamania County and western Klickitat County. McElroy Soils are well drained with medium to rapid runoff and moderate permeability. The series was established in 1981 following the introduction of volcanic ash from the eruption of Mt. St. Helens.*" The average annual precipitation is 55 inches, average air temperature is about 46 degrees Fahrenheit (F), and the average frost-free period is 105 – 125 days. Hazard of water erosion is moderate. This unit is used for woodland, hayland, pastureland, homesites, wildlife habitat, and recreation. Douglas fir, ponderosa pine, and grand fir are the main woodland species. Oregon white oak and bigleaf maple are trees of limited extent in this soil unit. Main limitation for harvesting timber is seasonal soil wetness…wheeled and tracked equipment produces ruts, compacts the soil, and damages the roots of trees…Unsurfaced roads and skid trails are soft and slippery and can be impassable when wet…Occasional snowpack hinders the use of equipment and limits access in winter. This unit is well suited to use as hayland and pastureland. The main limitation of this unit for use as homesites is the steepness of slop. Erosion is a hazard in the steeper areas. Capability sub-class IIIe.

#67, McElroy Series (included in this unit are small areas of Chemawa, Timberhead, Underwood, and Undusk soils), gravelly loam, 15 to 30 percent slopes. It formed in colluvium derived dominantly from basalt with a mantle of volcanic ash. The native vegetation is mixed conifers and shrubs. Elevation is from 400 to 2300 feet. [Note: the DEIS states that the McElroy Series is from 400 to 2600.] The average annual precipitation is 55 inches, average air temperature is about 46 degrees F, and the average frost-free period is 105 – 125 days. Runoff is medium and the hazard of water erosion is moderate. Most areas of this unit are used for woodland, pastureland, hayland, wildlife habitat, recreation, and **watershed.** A few areas are used as homesites. Douglas fir, ponderosa pine, and grand fir are the main woodland species on this unit. Limited extent trees are Oregon white oak and bigleaf maple. Main limitation for harvesting timber is seasonal soil wetness…wheeled and tracked equipment produces ruts, compacts the soil, and damages the roots of trees…Unsurfaced roads and skid trails are soft and slippery and can be impassable when wet… Occasional snowpack hinders the use of equipment and limits access in winter. This unit is well suited to use as hayland and pastureland. The main limitations are steepness of slope and the hazard of erosion. Main limitation for use as homesites

is the steepness of slope and erosion. **Restricted permeability and steepness of slope increase the possibility of failure of septic tank absorption fields.** Access roads should be designed to provide adequate cut-slope grade, and drains are needed to control surface runoff and keep soil losses to a minimum. Capability subclass IVe.

Watersheds are very important and should be protected from industrial wind farms.

#68, McElroy Series (included in this unit are small areas of Chemawa, Timberhead, Underwood, and Undusk soils), gravelly loam, 30 – 65 percent slopes. Very deep, well-drained soil is on the back slopes of mountains. It formed in colluvium derived dominantly from basalt with a mantle of volcanic ash. The native vegetation is mainly mixed conifers and shrubs. Elevation is 400 to 2300 feet. The average annual precipitation is 55 inches, average air temperature is about 46 degrees F, and the average frost-free period is 105 – 125 days. **Runoff is rapid, and the hazard of water erosion is severe.** This unit is used for woodland, wildlife habitat, recreation, and **watershed.** Douglas fir, ponderosa pine, and grand fir are the main woodland species on this unit. Oregon white oak and bigleaf maple are limited extent trees on the unit. Steep slopes restrict the use of wheeled and tracked equipment in skidding. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. Logging roads require suitable surfacing for year-round use. Occasional snowpack hinders the use of equipment and limits access in winter. Steep yarding paths, skid trails, and firebreaks are subject to rilling and gullying unless plant cover is maintained or adequate water bars are provided. Capability sub-class VIe.

#135, Timberhead Series, gravelly loam, 5 to 30 percent slopes. *The Timberhead series consists of very deep soils (up to 5 feet) formed in residuum and colluvium from basalt mixed with volcanic ash. The **soils exist on mountain ridges between 5 and 30 percent at elevations from 2,000 to 3,600 feet in Skamania County and western Klickitat County.** Timberhead Series soils are well drained with medium to rapid runoff and moderately high to high permeability.* [Note: The Soil Survey book states that this unit is at 2000 to 2800 feet elevation.] Average annual precipitation is about 60 inches, the average annual air temp is 44 degrees F, and the average frost-free period is 95 to 115 days. Included in this unit are small areas of McElroy, Underwood, and Undusk soils. Runoff is medium, and the hazard of water erosion is moderate. Most areas of this unit are used for woodland, recreation, wildlife habitat, and watershed. A few areas are used as grazeable woodland. Douglas fir, grand fir, and western hemlock are the main woodland species on this unit. [Would there be bats here, just like at the canopy crane, because of the hemlock?] Among the trees of limited extent is western redcedar. Areas on ridge tops that are subject to **strong, persistent winds** [how strong and how persistent?] are less productive than other areas of this unit. The main limitation of harvesting timber is seasonal soil wetness. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. Unsurfaced roads and skid trails are soft and slippery and can be impassable when wet. Occasional snowpack hinder the use of equipment and limits access in winter. This map unit is in capability subclass IVe.

#136, Timberhead Series, gravelly loam, 30 to 65 percent slopes. *The Timberhead series consists of very deep soils (up to 5 feet) formed in residuum and colluvium from basalt mixed*

with volcanic ash. The soils exist on mountain ridges between 5 and 30 percent at elevations from 2,000 to 3,600 feet in Skamania County and western Klickitat County. Timberhead Series soils are well drained with medium to rapid runoff and moderately high to high permeability. [Note: the Soil Survey book states that this soil unit is in the 2000 to 2800 foot elevation range.] Average annual precipitation is about 60 inches, the average annual air temp is 44 degrees F, and the average frost-free period is 95 to 115 days. Included in this unit are small areas of McElroy, Underwood, and Undusk soils. Also included are small areas of Rock outcrop and moderately deep soils over basalt. Available water capacity is moderately high. **The hazard of water erosion is severe.** Most areas of this unit are used for woodland, recreation, wildlife habitat, and **watershed.** Douglas fir, grand fir, and western hemlock are the main woodland species on this unit. Western redcedar is a tree of limited extent. The main limitation for harvesting timber is steepness of slope, which restricts the use of wheeled and tracked equipment. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. Occasional snowpack hinders the use of equipment and limits access in winter. Steep yarding paths, skid trails, and firebreaks, are subject to rilling and gullying unless plant cover is maintained or adequate water bars are provided. Capability subclass VIIe.

#144, Underwood loam, 2 to 15 percent slopes. *The Underwood series consists of very deep soils (5 feet or more) formed in residuum and colluvium from basalt and andesite with a thin mantle of volcanic ash. The soils exist on benches, backslopes, and footslopes of mountains with slopes between 2 and 50 percent at elevations between 500 and 2,700 feet in southeast Skamania County and west Klickitat County. Underwood Series soils are well drained with slow to medium runoff and moderately high permeability.* [Note: The Soil Survey book states that this unit is at 500 to 2000 feet elevation.] The native vegetation is mainly mixed conifers and shrubs. The average annual precipitation is about 50 inches, the average annual air temperature is about 46 degrees F, and the average frost-free period is 100 to 150 days. Included in this unit are small areas of Chemawa and McElroy soils on terraces and foot slopes and Timberhead and Undusk soils on ridgetops. Also included are small areas of soils that are more than 35 percent clay. Included areas make up about 10 percent of the total acreage. Permeability of this Underwood soil is moderately slow. **Available water capacity is high. Runoff is medium, and the hazard of water erosion is moderate.** This unit is used for woodland, hayland, pastureland, orchards, homesites, wildlife habitat, and recreation. Douglas fir, ponderosa pine, and grand fir are the main woodland species on this unit. Among the trees of limited extent are Oregon white oak and bigleaf maple. The main limitation for harvesting timber is seasonal soil wetness. **Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees.** Unsurfaced roads and skid trails are soft and can be impassable when wet. Logging roads require suitable surfacing for year-round use. **Occasional snowpack hinders the use of equipment and limits access in winter.** The main limitations of this unit for use as homesites are steepness of slope, shrink-swell potential, moderately slow permeability, **and the hazard of erosion in the steeper areas**. Use of sandy backfill for the trench and long absorption lines helps to compensate for the moderately slow permeability of the soil. **During the rainy season, effluent from onsite sewage disposal systems may seep at points downslope.** If the density of housing is moderate to high, community sewage systems are needed to prevent contamination of water supplies as a result of seepage from onsite disposal systems. The effects of shrinking and swelling can be minimized by using proper engineering designs. **Buildings and roads should be designed to offset**

the limited ability of the soil in this unit to support a load. This map unit is in capability subclass IIIe.

#147, Undusk gravelly loam, 5 to 30 percent slopes. *The Undusk series consists of very deep soils (5 feet or more) formed in residuum and colluvium from basalt and andesite with a thin mantle of volcanic ash. The soils exist on benches, backslopes, and footslopes of mountains with slopes between 5 and 65 percent at elevations between 2,000 and 2,800 feet in southeast Skamania County and west Klickitat County. Undusk Series soils are well drained with slow to medium runoff and moderately high permeability.*
Based on the current test pits and field observations, the site soil is best represented as Soil Site Class D (stiff soils). Rock with varying strength and weathering characteristics was encountered at depths ranging from 3 to 12 feet bgs. The average annual precipitation is about 55 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is 90 to 120 days. The subsoil to a depth of 60 inches or more is dark brown very gravelly loam and extremely gravelly loam. Included in this unit are small areas of Chemawa, McElroy, Timberhead, and Underwood soils on ridges and back slopes and **St. Martin soils on landslides**. Also included are small areas of soils that are less than 35 percent rock fragments and soils that are shallow to bedrock. Included areas make up about 12 percent of the total acreage. Permeability of this Undusk soil is moderate. **Available water capacity is moderately high. Runoff is medium, and the hazard of water erosion is moderate.** This unit is used for woodland, wildlife habitat, recreation, and **watershed**. Douglas fir, grand fir, and western hemlock are the main woodland species on this unit. Among the trees of limited extent are red alder and western redcedar. **Areas on ridgetops that are subject to strong, persistent winds are less productive than other areas of this unit.** The main limitation for harvesting timber is seasonal soil wetness. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. Unsurfaced roads and skid trails are soft and can be impassable when wet. Logging roads require suitable surfacing for year-round use. **Occasional snowpack hinders the use of equipment and limits access in winter.** Logging activities can readily displace the surface layer. This map unit is in capability subclass IVe.

#177, Undefined Soil Unit located West of wind turbine string C1-C4. ??????

These units sit next to the turbine strings—????

Turbines are heavy, unwieldy machines. In my research, I came across the following information, several articles—one from Wind Watch, one from aweo.org, and one on transporting wind turbines--which provide insight on just how big and weighty wind turbines actually are, and I believe this information is very pertinent to the evaluation of weight effects on the soils located in the proposed area of the Whistling Ridge wind farm:

Article #1

http://www.wind-watch.org/faq-size-p.php

National Wind Watch

FAQ -- Size

How big is a wind turbine?

Industrial wind turbines are a lot bigger than ones you might see in a schoolyard or behind someone's house.

The widely used GE 1.5-megawatt model, for example, consists of **116-ft blades atop a 212-ft tower for a total height of 328 feet.** The blades sweep a vertical airspace of just under an acre.

The 1.8-megawatt Vestas V90 from Denmark is also common. Its 148-ft blades (sweeping more than 1.5 acres) are on a 262-ft tower, totaling 410 feet.

Another model being seen more in the U.S. is the 2-megawatt Gamesa G87 from Spain, which sports 143-ft blades (just under 1.5 acres) on a 256-ft tower, totaling 399 feet.

Many existing models and new ones being introduced reach well over 400 feet high.

How are the wind turbine components transported?

Transport of such large items and the cranes needed to assemble them often presents problems in the remote areas where they are typically built. Roads must be widened, curves straightened, and in wild areas new roads built altogether.

What kind of platform is a wind turbine set in?

The steel tower is anchored in a platform of more than a thousand tons of concrete and steel rebar, 30 to 50 feet across and anywhere from 6 to 30 feet deep. Shafts are sometimes driven down farther to help anchor it. **Mountain tops must be blasted to accommodate it.** The platform is critical to stabilizing the immense weight of the turbine assembly.

How much do wind turbines weigh?

In the GE 1.5-megawatt model, **the nacelle alone weighs more than 56 tons**, the **blade assembly weighs more than 36 tons**, and **the tower itself weighs about 71 tons -- a total weight of 164 tons.** The corresponding weights for the Vestas V90 are 75, 40, and 152, total 267 tons; and for the Gamesa G87 72, 42, and 220, total 334 tons.

What is the nacelle?

The gearbox -- which transforms the slow turning of the blades to a faster rotor speed -- and the **generator are massive pieces of machinery housed in a bus-sized container**, called the nacelle, at the top of the tower. The blades are attached to the rotor hub at one end of the nacelle. **Some nacelles include a helicopter landing pad.**

Are wind turbines more intrusive than other structures of similar size?

Besides the noise and vibrations such huge moving machines unavoidably generate, they must be topped with flashing lights day and night to increase their visibility. The moving blades attract attention.

How much area is required for a wind power facility?

The **huge turbines require a correspondingly large area around them clear of trees and other turbines** to maximize the effect of the wind and avoid interference. **They should have 10 rotor diameters of clearance in the direction of the wind and 3 rotor diameters in every other direction.** In a line of several turbines perpendicular to the wind **(as on a mountain ridge), the GE 1.5-MW model would need at least 32 acres and the Vestas V90 78 acres for each tower.** In an array that can take advantage of the wind from any direction, the GE needs 82 acres and the Vestas V90 111 acres per tower.

In practice, the area varies, averaging about 50 acres per megawatt of capacity. On mountain ridges, the turbines are generally squeezed in about eight per mile.

Can the area around a wind turbine continue to be used?

Only by putting oneself in danger. Besides the **unpleasant noises and distracting motion, wind turbines are not safe.** They are **high-voltage electrical devices with large moving parts. It is estimated that for every 100 turbines, one blade will break off (see Larwood, 2005).** In the winter, heavy sheets of ice can build up and then fall or be thrown off. Access to the land around wind turbines is usually restricted, even to the landowner.

Are bigger turbines more efficient?

No, they are just **bigger.** Output depends on wind speed and the combination of blade diameter and generator size. **Bigger blades on a taller tower can capture more wind to run a bigger generator, but they don't do so more efficiently than smaller models.**

Article #2

http://www.aweo.org/windmodels.html
Size specifications of common industrial wind turbines

Vestas and General Electric (GE) dominate the market for industrial wind turbines in the U.S. Many older U.S. facilities use NEG Micon turbines, and Vestas has absorbed that manufacturer. Other older facilities use turbines from Zond, which was acquired by Enron (the inventor of "green tags"), whose wind business GE acquired in turn to take over the racket. Information about Vestas models can be found at www.vestas.com, Gamesa models at www.gamesa.es/en/products/wind-turbines/catalogue, GE models at www.gepower.com/prod_serv/products/wind_turbines/en, Siemens models at www.powergeneration.siemens.com/products-solutions-services/products-packages/wind-turbines/products/Products.htm, Suzlon models at www.suzlon.com, Clipper models at www.clipperwind.com, and Repower (acquired by Suzlon in May 2007) models at www.repower.de/index.php?id=12&L=1. Americas Wind Energy, Enercon, Fuhrländer, Mitsubishi, Goldwind, Nordex, AAER, Dewind, and Ecotècnia are also major manufacturers, but their turbines are less common in the U.S.

model	capacity	blade length*	hub ht†	total ht	area swept by blades	rpm range	max blade tip speed‡	rated wind speed§
GE 1.5s	1.5 MW	35.25 m (116 ft)	64.7 m (212 ft)	99.95 m (328 ft)	3,904 m² (0.96 acre)	11.1-22.2	183 mph	12 m/s (27 mph)
GE 1.5sle	1.5 MW	38.5 m (126 ft)	80 m (262 ft)	118.5 m (389 ft)	4,657 m² (1.15 acre)	?	?	14 m/s (31 mph)
Vestas V82	1.65 MW	41 m (135 ft)	70 m (230 ft)	111 m (364 ft)	5,281 m² (1.30 acres)	?-14.4	138 mph	13 m/s (29 mph)
Vestas V90	1.8 MW	45 m (148 ft)	80 m (262 ft)	125 m (410 ft)	6,362 m² (1.57 acres)	8.8-14.9	157 mph	11 m/s (25 mph)
			105 m (344 ft)	150 m (492 ft)				
Vestas V100	2.75 MW	50 m (164 ft)	80 m (262 ft)	130 m (427 ft)	7,854 m² (1.94 acres)	7.2-15.3	179 mph	15 m/s (34 mph)
			100 m (328 ft)	150 m (492 ft)				
Vestas V90	3.0 MW	45 m	80 m	125 m	6,362 m²	9-19	200 mph	15 m/s

		(148 ft)	(262 ft)	(410 ft)	(1.57 acres)			(34 mph)
Gamesa G87	2.0 MW	43.5 m (143 ft)	78 m (256 ft)	121.5 m (399 ft)	5,945 m² (1.47 acres)	9/19	194 mph	c. 13.5 m/s (30 mph)
Siemens	2.3 MW	46.5 m (153 ft)	80 m (262 ft)	126.5 m (415 ft)	6,793 m² (1.68 acres)	6-16	169 mph	13-14 m/s (29-31 mph)
Bonus (Siemens)	1.3 MW	31 m (102 ft)	68 m (223 ft)	99 m (325 ft)	3,019 m² (0.75 acres)	13/19	138 mph	14 m/s (31 mph)
Bonus (Siemens)	2.0 MW	38 m (125 ft)	60 m (197 ft)	98 m (322 ft)	4,536 m² (1.12 acres)	11/17	151 mph	c. 15 m/s (c. 34 mph)
Bonus (Siemens)	2.3 MW	41.2 m (135 ft)	80 m (262 ft)	121.2 m (398 ft)	5,333 m² (1.32 acres)	11/17	164 mph	c. 15 m/s (c. 34 mph)
Suzlon 950	0.95 MW	32 m (105 ft)	65 m (213 ft)	97 m (318 ft)	3,217 m² (0.79 acres)	13.9/20.8	156 mph	11 m/s (25 mph)
Suzlon S64	1.25 MW	32 m (105 ft)	73 m (240 ft)	105 m (344 ft)	3,217 m² (0.79 acres)	13.9/20.8	156 mph	12 m/s (27 mph)
Suzlon S88	2.1 MW	44 m (144 ft)	80 m (262 ft)	124 m (407 ft)	6,082 m² (1.50 acres)			14 m/s (31 mph)
Clipper Liberty	2.5 MW (4 × 650 KW)	44.5 m (146 ft)	80 m (262 ft)	124.5 m (409 ft)	6,221 m² (1.54 acres)	9.7-15.5	163 mph	c. 11.5 m/s (c. 26 mph)
		46.5 m (153 ft)		126.5 m (415 ft)	6,793 m² (1.68 acres)		169 mph	
		49.5 m (162 ft)	78 m (256 ft)	127.5 m (418 ft)	7,698 m² (1.90 acres)		180 mph	
Repower MM92	2.0 MW	46.25 m (152 ft)	100 m (328 ft)	146.25 m (480 ft)	6,720 m² (1.66 acres)	7.8-15.0	163 mph	11.2 m/s (25 mph)

*This figure is actually half the rotor diameter. The blade itself may be about a meter shorter, because it is attached to a large hub.

†Hub (tower) heights may vary; the more commonly used sizes are presented.
‡Rotor diameter (m) × π × rpm ÷ 26.82
§The rated, or nominal, wind speed is the speed at which the turbine produces power at its full capacity. For example the GE 1.5s does not generate 1.5 MW of power until the wind is blowing steadily at 27 mph or more. As the wind falls below that, power production falls exponentially.

Article #3

http://www.cn.ca/documents/WhitePapers/Transporting-Wind-Turbines-White-Paper-en.pdf
HOW BIG IS BIG?

To understand and appreciate the logistics of transporting such massive parts it helps to understand the makeup of a wind turbine. The specs for a 1.8 MW turbine provided by the Canadian Wind Energy Association (CanWEA):

- **The nacelle (generator components)** is the size of a small motor home and weighs 63,000 kg (138,891 lb).
- **Each blade** is 39 m (128 ') long – the same length as a Boeing 737, and the 3-blade rotor weighs 35,000 kg (77,162 lb).
- **The 65 m (213 ') tower** is made up of rolled steel and comes in three pieces. The entire tower weighs 132,000 kg and contains enough steel to manufacture 206 average cars.
- **The foundation concrete** is 9 – 10 m (33 ') deep and 4 m (13 ') across. 102 tension type bolts run the full depth of the foundation.
- **Swept area** of the blades is 5,024 sq. m, (16,483 ') the size of 3 NHL hockey rinks combined or about 1.25 acres.
- **Total weight** of the entire turbine is 230,000 kg (507,063 lb) – about the same as two fully fueled 3,200 HP diesel electric locomotives.

This is just one example, however even the wind turbine components above are often even bigger than this.

WWW.CN.CA 4 **THE LOGISTICS, NOT EXACTLY A BREEZE**

Understanding the size of wind turbines provides an appreciation for the complexity of their transportation. A single turbine can require up to 8 loads (one nacelle, one hub, three blades and three tower sections). **For an entire project of 150 MW, transportation requirements have been as much as 689 truckloads, 140 railcars and 8 vessels to the United States.** And, many projects today are much larger than 150 MW (the largest operating project in the US is currently 736 MW, and projects of more than 4,000 MWs are in the early stages of development).*5*

It is no wonder that one of the biggest challenges facing the industry are the logistics of transporting such oversized parts sometimes over extremely long distances. **Among the issues; traffic backups, road damage, coordination and cost.**

TRAFFIC CONGESTION

As suggested in a recent article in the New York Times, *"As demand for clean energy grows, towns around the country are finding their traffic patterns roiled as convoys carrying disassembled towers that will reach more than 250 feet (*76.2 m*) in height, as well as motors, blades and other parts roll through. Escorted by patrol cars and gawked at by pedestrians, the equipment must often travel hundreds of miles from ports or factories to the remote, windy destinations where the turbines are erected."6*

ROAD DAMAGE

Normal wear and tear of any road is expected over time, but **whenever there is extensive pressure and constant flow of traffic, road damage becomes inevitable.** In Texas for example, the state with the most wind turbines, the **constant truck traffic is tearing up small roads** in the western part of the state, where the turbines are being rapidly erected.

Conclusions and Comments:

1. **An in-depth geological study should be made of the entire proposed site—before the project is approved, not after. A near-surface seismic hazard survey and deep coring should be required before this project is approved.**

2. **No watershed studies have been done for this project site, even though the Soil Surveys clearly state that this is a watershed area.**

3. **The impacts of the turbines' weights on the mountain ridges in the DEIS has not been fully addressed. Could mass wasting result from ridges being flattened, heavy machinery being installed, deep anchors disturbing the soils, etc?**

4. **"The steel tower is anchored in a platform of more than a thousand tons of concrete and steel rebar,** 30 to 50 feet across and anywhere from 6 to 30 feet deep. Shafts are sometimes driven down farther to help anchor it. **Mountain tops must be blasted to accommodate it.** The platform is critical to stabilizing the immense weight of the turbine assembly." This statement is from the National Windwatch article. I really don't want to see mountain tops "blasted," and residents near the wind farm proposal probably don't want to see it, either! The proposed wind farm has 50 some turbines proposed. That is 50 x 1000 tons of concrete and steel rebar = to 50,000 tons of concrete and steel rebar weighing down on soils that are susceptible to erosion; one ton equals 2000 pounds, 2000 pounds x 50,000 tons = 50,000,000 pounds. What are the cumulative impacts of putting 50,000,000 pounds of stress on mountain ridges in Skamania County, and what are the cumulative effects of all the other wind farms' weights on all the lands and soils in BPA's area of interest? What does all this weight do to water tables? Any other effects? This issue of weight should be addressed more fully in the DEIS and its lack makes the DEIS inadequate and incomplete.

5. Wind turbines are dangerous pieces of noisy machinery and they should not be put on top of ridges or on steep slopes. At least this is what I think. The lack of information on the environmental, cumulative impacts of wind turbines on lands and soils is a critical deficiency in the Whistling Ridge DEIS and this is a fatal flaw in the DEIS.

6. Mass wasting is a real concern in the proposal area and it has not been adequately addressed in the DEIS. There are real consequences to area residents from erosion and mass wasting events. How would people be evacuated if a wind turbine's weight causes a mass wasting event or other types of erosion? What are the evacuation routes?

There are a lot of questions about the geology of the proposal area that have not been adequately answered in the DEIS. We need complete data in order to properly evaluate the DEIS.

/e-signature/**Mary J. Repar**
27 August 2010

Michelle, Kayce (UTC)

From: [redacted]@kineticsinc.com
Sent: Friday, August 27, 2010 1:13 PM
To: EFSEC (UTC)
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to express my strong support for the Whistling Ridge Energy Project. I am proud to live in a community adjacent to this project. I am proud to say we will have such a project here. We are doing our part to help our Country become as environmentally conscious as possible in our energy production and use.

I will see the turbines from our property, and most likely also hear them. And although I live up in the Little White Salmon River Canyon Valley I can hear the trains running along both sides of the Columbia River, I hear the barges as they go up and down the River, and I hear the generators and alarms from the US Federal Fish Hatchery down in the Canyon. I hear all this while I live in the beautiful forest and so do the dear eating my Blueberries, the Turkey\'s eating my bird seed, the Cougar that crossed our road a while back, and the bear that smashed our drinking water spring roof last week. Surprise, we all seem to be flourishing here in the woods side by side!

SDS has an excellent reputation as a supporter of our community, citizens, our fire departments, schools, etc., and they go out of their way to allow public use of their lands and conduct their business with consideration of us as their neighbors. Surprise, industry working side-by-side private homes in the wilderness, it works!

I am proud to live here in Mill A, in Skamania County Washington.

Turn the tables everyone, use the Whistling Ridge Energy Project as an asset!!

Anita Gahimer Crow
Resident and Business Owner
Mill A/Cook, Washington

Sincerely,
Anita Gahimer Crow
[redacted] Fouts Road
Cook, WA 98605

Michelle, Kayce (UTC)

From: Vervair, Candace (ATG)
Sent: Friday, August 27, 2010 2:17 PM
To: Wright, Al (UTC); EFSEC (UTC); Wallis, Bob (UTC); 'jasons@sdslumber.com'; 'Don McIvor'; Crews, Kyle (ATG); 'tlmcmahan@stoel.com'; 'dpeeples@ix.netcom.com'; Usibelli, Tony (COM); 'gkahn@rke-law.com'; 'rick@aramburu-eustis.com'; 'bwittenberg@skamaniapud.com'; 'pbryan@skamania-edc.org'; 'info@scaassn.org'; 'isa@isaannetaylor.com'; 'chrism@awb.org'; 'Shawnc@seattleaudubon.org'; Arens, Jill; 'john@portofskamania.org'; 'mayor@ci.white-salmon.wa.us'; 'mikec@co.klickitat.wa.us'; Jaffe, Dori (ATG); 'nathan@gorgefriends.org'
Cc: Marvin, Bruce (ATG)
Subject: Whistling Ridge Energy Project

Please see attached letter from AAG H. Bruce Marvin, Counsel for Environment:

Letter 20100827
Comments on DE..

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August 27, 2010

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Re: Whistling Ridge Energy Project Draft Environmental Impact Statement: Comments

To Whom It May Concern:

Counsel for the Environment (CFE) appreciates this opportunity to comment on the Whistling Ridge Energy Project (Whistling Ridge) Draft Environmental Impact Statement (DEIS). The following comments seek to ensure that the Final Environmental Impact Statement (FEIS) fully captures and analyzes the proposed project's environmental impacts, potential mitigation measures, and reasonable off-site and on-site alternatives so that permitting authorities can make a fully informed decision. CFE takes no position regarding the merits of the project at this time.

1.0 Summary and Purpose of and Need for Action

1.4 ALTERNATIVES ANALYSIS

The Alternatives Analysis is limited to a No Action alternative. While the DEIS states that other locations, project sizes and project configurations were considered, it fails to identify these alternative locations or configurations, or adequately explain why they were not worthy of additional analysis. As described in more detail below, the off-site and on-site alternative analyses should be expanded to include in-depth descriptions of the criteria used to select the proposed site and the proposed project configuration, as well as a focused discussion about why other sites and project configurations were excluded from further review.

1.4.1 Proposed Action

The second bulleted factor in this section indicates that the site must be large enough to accommodate enough wind turbines to produce a minimum of 70 MW of electricity. Because the wind does not blow at a constant rate, wind turbines rarely operate at 100% percent capacity. Accordingly, references to wind generating capacity should be expressed in nameplate generation capacity.

The fourth bulleted factor in this section states: "The site has a long history of commercial logging and associated absence of *native* habitat, reducing or eliminating the need to clear additional forest land." This and similar statements regarding the "absence of native habitat" are made in several places in the document (*e.g.*, 3.4.1.1), and the statement is misleading. With the exception of the weeds identified at the site and disclosed elsewhere in the document, grass, forb, shrub, and tree species at the site are predominantly native. A more accurate statement would be that the site is heavily managed and manipulated and is not in a *natural* state, being maintained in a state of disclimax and with monotypic forest stands. The affected environment description provided in Chapter 3 (3.4.1.1 and 3.4.1.2) is far more accurate.

The final paragraph in this section states that the project would have a total nameplate capacity of "up to 75 MW." The second bulleted factor in this section states that project's minimum nameplate capacity is 70 MW. It is unclear how these two figures relate to one another. The project's maximum and minimum nameplate generating capacity levels should be clearly identified and described in a single location.

1.4.1.1 Wind Turbines

The generating capacity should be referenced as nameplate capacity. This section should also clarify whether the size of the turbines will be consistent throughout the project or whether the size will vary from tower to tower.

1.4.2 No Action Alternative

This section states that the only circumstance the project will not be built is if the responsible agencies (BPA or EFSEC) withhold their authorization. There are a multitude of reasons why a proposed project may not be built. This statement is not accurate and should be removed from the FEIS.

1.4.3 Alternatives Considered But Eliminated From Detailed Study

This section explains why the no action alternative was the only alternative analyzed. In doing so, it references a set of technical and economic requirements that purportedly eliminated all other potential project sites from consideration. None of the eliminated off-site locations,

however, are identified, and the DEIS does not contain the underlying technical and economic data the Applicant used to eliminate the undisclosed sites from further consideration. At a minimum, the FEIS should include detailed information regarding the economic and technical data underlying the site selection criteria, as well as the locations of all potential alternative sites considered so that the decision to limit review to the No Action alternative can be independently verified.

1.4.3.1 Alternative Project Locations

The DEIS states that the Applicant applied the following criteria to determine whether alternative project locations were available for EIS review: adequate wind supply, applicant ownership of land, ability to operate wind turbines without impacting commercial timber operations, and proximity to high voltage transmission lines. The DEIS analysis and discussion of the alternative location selection process is set forth in a single sentence:

> No other sites were identified that are under the ownership of the Applicant or as close to transmission infrastructure facilities.

DEIS at p. 1-14. This summary analysis should be expanded to include a detailed description of the criteria used to select the project site, the location of the alternative sites that were considered, and discussion regarding why these alternative sites were ultimately eliminated from further consideration.[1] The FEIS should also be expanded to consider the Middle Mountain Project, which is only 12 miles from the proposed project site, as an alternative wind generation site.

1.4.3.2 Larger or Smaller Generation Facility Size

The FEIS should be expanded to address on-site alternatives that reduce the number of turbines and/or reconfigure the turbine strings. The purpose of the alternatives analysis is to explore whether the needs of the project can be accomplished through less environmentally impactful means. During the scoping hearings, the public and National Parks Service raised concerns regarding the project's visual impacts, particularly regarding the location of Turbine String A.[2]

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[1] Ideally, this discussion would include information sufficient to independently verify the decision to eliminate these alternative sites from further consideration. This would include the location of SDS holdings in Southern Washington and Northern Oregon, wind resources available in those areas, the location of transmission lines, economic parameters for the project, as well as economic information regarding the project's interrelationship with timber harvesting activities.

[2] Turbine String A is also unique in that it contains the turbines in closest proximity to residential dwellings and is located on a parcel of land that is zoned FOR/AG 20, which would require issuance of a conditional use permit under Skamania County's land use laws. *See* DEIS at p. 3-153.

This section asserts that the project must be reviewed as an "integrated whole" from which no piece may be eliminated and that if turbines are removed from the project design, "other locations must be found to replace those turbines to maintain the minimum necessary capacity." These assertions are unsupported by analysis and appear to be inconsistent with the project description in both the Site Certification Application (SCA) and the DEIS. Both the SCA and the DEIS state that the project will have a total nameplate generating capacity of approximately 75 MW and will be comprised of up to 50 towers equipped with turbines with nameplate generating capacities ranging from 1.2 to 2.5 MW .[3] Assuming that a 2 MW turbine is selected, the maximum generating capacity of 75 MW could be satisfied with the installation of 38 turbines (resulting in a reduction of 12 turbines).[4] If a 2.5 MW turbine is selected, the number of towers could be reduced to 30.

Reducing the number of turbines without sacrificing nameplate generating capacity is not merely hypothetical. The Kittitas Valley Wind Power Project recently reduced its total number of turbines from a maximum of 65 to a maximum of 52 turbines without any change in nameplate generating capacity. The FEIS should include a discussion regarding how the project may be reconfigured through the use of turbines with larger generating capacities.

The FEIS should include information regarding the strength and viability of wind resources found throughout the site. This would include information gathered from the on-site meteorological tower regarding the strength, quality, direction and location of on-site wind resources.

1.4.3.4 Alternative Project Configurations

See comments under § 1.4.3.2, Larger or Smaller Generation Facility Size.

1.4.3.6 Alternative Access Roads

Private logging road CG 2930 should be subject to detailed review as an alternative access road. The original Site Certification Application proposed accessing the site using this route. On October 12, 2009, the Applicant submitted an amended application that abandoned the CG 2930

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[3] The SCA at Section 2.3.3.1, for example, states that "[t]he project would consist of **up to 50 wind turbines**" and that each turbine would have a nameplate generating power of somewhere between 1.2- to 2.5 MW. (Emphasis added). The DEIS contains an identical description.[3] *See* DEIS at §1.4.1.1. Both the SCA and DEIS also state that the project must have a generating capacity of "up to 75 MW." *See* SCA at §2.3.2 (Project Overview – "up to 75 MW"); DEIS at §1.4.1 ("minimum of 70 MW;" "up to 75 MW").

[4] Recently permitted projects appear to be installing turbines with nameplate generation capacities of 2.0 MW or larger. The Desert Claim Wind Power Project, for example, will be installing 2 MW turbines. *See* Desert Claim Wind Power Project Final Supplemental EIS at 2-13. The recent expansion to the Wild Horse Wind Power Project also used 2.0 MW turbines.

route in favor of the West Pit Road with the stated purpose of removing the entire project outside the CRGNSA boundary. *See* October 12, 2009 Letter from Whistling Ridge Energy Project to EFSEC re: Submittal of Amended Application 2009-01. Although removing this route from the project plan may dispose of certain regulatory hurdles, the West Pit Road is a longer route that traverses steeper terrain and will likely have a higher environmental impact than the CG 2930.[5] Accordingly, this CG 2930 should be evaluated as an alternative.

1.6 SUMMARY OF POTENTIAL PROJECT IMPACTS AND MITIGATION MEASURES

Earth – p. 1-22 – Impact of Proposed Project: Much of the West Pit Road is located in a Class II Landslide Hazard Area. This section should summarize and address anticipated impacts, if any, related to Class II Landslide Hazard Areas.

Air Quality – p. 1-22 – Impact of No Action Alternative: This section identifies impacts from construction of fossil fuel power plants as a potential impact under the no action alternative. There is nothing in the record establishing that proposed project is being built in lieu of fossil fuel powered plant or that its construction will reduce the number of fossil fuel powered generation facilities in the future. Indeed, intermittent nature of wind generated power may require the construction of fossil fuel facilities to provide a back up power source.[6]

Biological Resources – p. 1-23 – Impact of No Action Alternative: *See* comments regarding Air Quality – p. 1-22 – Impact of No Action Alternative *infra*.

Biological Resources – p. 1-24 – Impact of Proposed Project: This section states that there "would likely be some mortality to birds and bats due to turbine collision and displacement." This should be revised to state that operation of project "will result in mortality to some birds and bats . . ."

Biological Resources – p. 1-24 – Design and Mitigation Measures: Remove qualifier "extensive" from pre-project assessment of wildlife habitat conducted under WDFW Wind Power Guidelines.

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[5] Long sections of West Pit Road crosses land designated as a Class II landslide hazard area. *See* DEIS Figures 3.1-1, 3.1-4 and 3.11-2

[6] The No Action Alternative analysis appearing on p. 3-92 and in other section of the DEIS contains a more accurate description of the possible impacts if no action is taken:

> It is likely that the region's power needs would be met through energy efficiency and conservation measures, existing power generation, or the development of new power generation. Base load demands would likely be filled through expansion of existing, or development of new thermal generation such as gas-fired combustion turbine technology. The impacts would depend on the type, location, and size of the facility proposed.

Biological Resources - p. 1-24 – Design and Mitigation Measures: A Technical Advisory Committee (TAC) is described, including a description of the stakeholders comprising this group. Because the overarching concern for biological resources is bird and bat mortality, a representative of the Audubon Society should be specified and included in the TAC.[7]

Biological Resources - p. 1-25 – Design and Mitigation Measures: The post construction avian mortality monitoring should include bat mortality monitoring as so little is known about bat species' composition and mortality risk at the site. The monitoring program should also analyze the accuracy of the pre-construction risk and mortality predictions. Because the project is being proposed in a new habitat type (forested) for Washington wind energy projects, and because so little is known about bat use of the site, bird and bat monitoring should be conducted for five (5) years, rather than the proposed two (2) years.

Visual Resources – p. 1-28 – Impact of Proposed Project: This section should clearly state that as proposed the project **will** have low to moderate visual impacts from key viewpoints, including key viewpoints within the CRGNSA.

1.7 SUMMARY OF UNAVOIDABLE ADVERSE IMPACTS

This section should plainly identify and summarize unavoidable **adverse** impacts. References to beneficial impacts should be removed. The description of unavoidable visual impacts (Table 1-2, p. 1-35) should be re-drafted to read as follows:

> This project will have unavoidable adverse visual impacts on the surrounding area. Visual impact analysis establishes that the project will have low to moderate visual impacts from key viewpoints, including viewpoints within the CRGNSA.

1.8 CUMULATIVE IMPACTS

The discussions of existing development in section 1.8.1.1 and reasonably foreseeable future development in section 1.8.1.2 appear to be inconsistent. In section 1.8.1.1, the authors considered wind projects located 35 to 70 miles from the proposed project in their cumulative analysis. In section 1.8.1.2, however, the authors chose to disregard two proposed wind power projects (Juniper Canyon and Summit Ridge) because they are "too far away (generally more than 20 miles) from the Whistling Ridge Energy Project site to result in cumulative impacts." Given that the cumulative analysis of existing impacts considered projects that were located 70 miles away, the analysis of cumulative impacts relating to reasonably foreseeable future

[7] The TAC should also be expanded to include representatives from local public interest groups, including interveners Friends of the Columbia Gorge and Save Our Scenic Area.

development should apply similar criteria or include an explanation as to why different criteria were applied.

1.8.1 Projects Considered

The cumulative impact section should discuss the intermittent nature of wind energy generation and the need for easily dispatchable hydro-electric or fossil fuel generating plants to meet demand when the wind is not blowing.

2.0 Proposed Action and Alternatives

2.1 PROPOSED ACTION

2.1.2 Project Overview

Table 2-1 – Permanent disturbance areas should include the permanent parking areas adjacent to each turbine that will be necessary to conduct turbine repairs and maintenance. Also there appears to be some inconsistency in the road width used to determine the impact area outside the project.

2.1.3.7 Access Roads

Neither the Application nor the DEIS include a description of parking areas that will have to be maintained adjacent to each turbine for construction and maintenance purposes. The space consumed by these parking areas should also be included in the calculations for permanently disturbed environment.

2.1.4.1 Construction

The size and location of proposed laydown areas should be disclosed and evaluated in the FEIS.

The size and location of permanent parking lots next to each turbine should be included and evaluated in the FEIS.

This section should include a discussion regarding how concrete will be transported to the construction site. If a concrete batch plant is going to be used, its size and location should be disclosed in the FEIS. If concrete is going to be transported to the site, information regarding the trucking route and potential environmental impacts (air pollution, traffic, etc.) should be disclosed and evaluated in the FEIS.

2.1.6 Forest Harvest During Project Construction and Operation

Mitigation measures for construction of the project should include off-site mitigation for permanently disturbed or cleared areas that would constitute "forest conversions." This would include turbine parking areas and any permanent laydown area at the site.

2.1.7 Project Decommissioning

The Applicant has indicated that the life of the project is expected to be 30 years, at which time the project will either be upgraded ("re-powered") or decommissioned. If the current project receives EFSEC approval, any proposal to "re-power" the project or extend operation of the project beyond its anticipated life span should be reviewed by EFSEC as an amendment to the Site Certification Agreement. Such review should require an updated evaluation and assessment of the environmental impacts posed by the upgrade or extended life of the project.

2.3. NO ACTION ALTERNATIVE

See comments in response to Section 1.4.3 Summary of No Action Alternative.

2.3.6 Alternative Access Roads

See comments in response to Section 1.4.3.6 Alternative Access Roads.

2.4 BENEFITS AND DISADVANTAGES OF DELAYING PROJECT IMPLEMENTATION

This section summarizes the benefits and disadvantages that will result from delaying the project. It is drafted, however, in a way that minimizes the benefits and over-exaggerates the disadvantages of delay. For example, statements to the effect that a delay will prevent the creation of new construction jobs are simply not accurate. A delay in constructing the project will result in a delay in the creation of new construction jobs, just as a delay in constructing the project will delay visual impacts from the project.

2.5 COMPARISON OF ALTERNATIVES

Government action or inaction is not the only possible reason that the project will not be built. For the reasons discussed earlier, assertions that the No Action Alternative will only arise if EFSEC or BPA deny approval of the project should be redacted.

As discussed above, the DEIS should be expanded to include off site and on site alternatives. Without these additional alternatives, the comparison of the limited alternatives set forth in Table 2-5 is of questionable value for purposes of conducting meaningful environmental impact analysis under NEPA and SEPA.

3.0 Affected Environment, Impacts and Mitigation

Generally, discussions in this section should be expanded to include off site and on site alternatives.

3.1 EARTH

3.1.1.4 Geologic Hazards

This section should be expanded to address geologic hazard issues related to the proposed access road (West Pit Road). That this road traverses lands identified as Class II Landslide Hazards is of particular concern. *See* Table 3.1-4.[8]

The DEIS should also be revised to include a discussion regarding the extent to which Skamania County has assessed whether the project site or the area traversed by the proposed access road contains Class I landslide hazards (Severe).[9] If such an assessment has not been done, the discussion regarding landslide hazards should be expanded to determine whether there are affected areas that would otherwise meet the criteria for a Class I landslide hazards, even though they have not been formally designated as such by the County.

3.1.2.1 Proposed Actions

Access Road. This section should be expanded to include a discussion of geologic hazards and their impact on the access road during both the construction and operation of the proposed project, including the environmental impacts that may arise from locating the access road in a Class II landslide area.

Soil Contamination. The discussion regarding soils does not address possible presence of contaminants along the access road right of way or at the project site. The FEIS should include the results of a Phase I Environmental Site Assessment to determine if and where contaminated soils may exist.

Volcanic Activity. This section should discuss how ash from a volcanic eruption may impact the operation of wind turbines, transmission lines, and other elements of the project.

3.1.2.2 Mitigation Measures

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[8] Table 3.1-4 should be revised so that the locations of the proposed access road, as well as other access road alternatives, are easily discernable.

[9] To qualify as a Class I landslide hazard, the location must be designated as such by the local legislative body, in this case Skamania County. *See* DEIS at § 3.1.1.4 *Landslides.*

This section should describe containment and remediation measures that will be taken in the event contaminated soils are found during construction.

The scope of the mitigation measures should be expanded to address geologic hazards associated with the access road and address how the project will be accessed if the proposed access road is damaged or destroyed by a catastrophic geologic event.

The project is located in the vicinity of several volcanoes and the access road traverses land designated as a Class II landslide hazard. This section should describe and discuss mitigation measures designed to protect the environment and human health and safety in the event of a catastrophic geologic event.

3.4 BIOLOGICAL RESOURCES

3.4.1.2 Habitats

Conifer Forests – p.3-37. The second to the last sentence in this section states that "[t]he majority of coniferous forests within the project site is managed for commercial timber production, and is replanted following harvest." "Majority" could mean anywhere from 51 percent to 100 percent. A more quantitative disclosure is needed here.

Conclusion - p. 3-39. The final sentence in this section states that "[t]he project site is not located within any known wildlife corridor, flyway, foraging area, or migratory route." This statement is problematic as the site lies within the landscape-scale Pacific Flyway, which is adjacent to the Columbia River gorge (which, in turn, is a significant migratory flyway, particularly for water birds), and all north-south cordilleras in the state support at least a weak raptor migration. Elsewhere in the document (*e.g.*, p. 46), raptor activity at the site is ascribed to migratory behavior. Also, some of the bat behavior observed at the site is assumed to be foraging behavior, and birds and other wildlife are known to forage in the project area. Use of the term "known" is also problematic and suggests the need for additional study. For example, no data was collected to assess bird or bat migration activity at the site.

3.4.1.5 Special Status Wildlife Species

General Comments, Strike Risk Modeling: The avian surveys for the project use a very crude index to rank relative strike risk among the various species of birds recorded at the site. One of the three variables in the strike risk model relies on where in the vertical air column (in or out of the rotor swept zone) birds were initially detected when they were first seen.[10] No observations of bird behavior were made over any extended period of time. The behavior was apparently not even recorded for all observations, as in some years the metric is absent. Furthermore, as highly mobile species, almost any bird will at some point cross the rotor-swept area.

Some very sophisticated strike risk models have been developed around wind energy towers. The validity of at least some of these models is still in question. Nonetheless, they attempt to quantify the amount of time a species spends in the rotor strike zone, and assign risk based in part on the size, speed, and flight paths of birds crossing the rotor swept area. While implementation of such complex models may not be necessary (at this point) for this project, reliance on the simplistic model used for this project is misleading and the results should be removed from the DEIS, or at the very least the model's limitations (which are discussed in some detail in avian survey reports) should be fully disclosed in the body of the DEIS to ensure that the reader is not misled.

The avian survey report (Appendix C-4) indicates that the index is formulated to help rank the relative risk each species might face in the presence of wind towers. At best, the index may give some insight among the species at this site, but comparison to other sites, particularly in different habitat types from the proposed project, is highly suspect and appears to be untested. Appendix C-4 also states "...no relationships have been observed between overall use by bird types other than raptors, and fatality rates of those bird types at wind-energy facility. Such a lack of predictive ability also speaks for a need for long-term follow up monitoring to assess the true impacts of the project on birds.

General Comment, Species Abundance: Discussion regarding the abundance of species at the site lack context. For example, the DEIS reports that fifteen (15) swifts were seen in fall 2004, four (4) in summer 2006, and eleven (11) in summer 2009. The DEIS, however, fails to place these types of figures into a context. Do these observations constitute "a lot"? "Very few"? Compared to the next watershed west, or the core of the species range? In the case of the swifts, and indeed most species recorded in the project area, subjectively it seems that few of any given species are represented. However, in the case of migrating birds (such as the 15 swifts observed in fall 2004), this could represent a rate. In other words, there could be 15 swifts per day, or per hour trying to migrate across the project site. There is simply no contextual information to put

[10] Glancing at a bird and assigning it to "in" or "out" of the rotor swept area is an exceptionally poor predictor of mortality risk. For example, the avian survey report indicates that Horned Larks are often the most commonly found birds killed at wind tower sites. Horned Larks spend a significant amount of time on the ground. Accordingly, it is likely that an index of this species' strike risk formulated based on this project's model would forecast a low mortality risk and be a very poor predictor.

these numbers into a wider perspective. Similar information subject to this same criticism is provided for other species of concern.

Introduction, p. 3-45: The introductory paragraph states that "[t]wo additional special status species, Keen's myotis (Myotis keenii) and Townsend's big-eared bat (Corynorhinus townsendii), may occur but have not been identified in prior surveys." A more accurate statement would be that these two species could occur at the site, but surveys conducted at the site were incapable of identifying these or any other bats, except the hoary bat, to the species level.[11]

Northern Spotted Owl, *Historical Activity Centers,* p. 3-52: This section should be revised to discuss and analyze a May 2010 record of a Spotted Owl in one of the owl circles north of the site. The remaining section addressing Spotted Owl issues should be updated to reflect this finding.

Northern Spotted Owl, *Conservation Support Area,* p. 3.54: Although managed forest is not optimal for spotted owls, it is likely better than wind towers which pose greater mortality risk than young even-aged stands of trees. To that end, the project can only be contrary to the purpose of the CSA. It may be just 0.27% of the area, but it is still a loss that should be disclosed in the discussion (including cumulative impacts).

Northern Spotted Owl, *Spotted Owl Special Emphasis Centers*, p. 3-56: The discussion on this point is obtuse and would benefit from illustration on a map.

The footnote to this discussion indicates that DNR reports that the Mill Creek site has 48 percent of the recommended 40 percent minimum suitable habitat for a spotted owl special emphasis center. The discussion in this section should be expanded to identify what fraction of that suitable habitat occurs where the 1.4 mile circle overlaps with the northwest corner of the project site.

Olive-sided flycatcher, p. 3-56: This section should be expanded to address the following issues. According to Breeding Bird Survey data, this species declined at the rate of 3.3 percent per year between 1966 and 2001. Loss of winter habitat is thought to be one causal mechanism. Another is that managed forests, which superficially replicate the fire-altered forests the birds depend on, may not offer all that the birds need to meet life history requirements.

The last sentence in this paragraph states "none were recorded during the fall of 2004 or the winter of 2008–2009." The Olive-sided Flycatcher is a late spring arrival and departs in late

[11] On page 3-59 states: "Bat surveys conducted during 2007, 2008, and 2009 (Appendices C-8, C-9, and C-10) did not have the ability to detect individual species of bats. Instead, bats were grouped into species with either "high frequency" calls or "low frequency" calls."

summer. Recording the species at the site in fall or winter would be most unusual.

Vaux's Swift, p. 3-57. *See* **General Comment**, Species Abundance above.

Keen's Myotis and Townsend's Big-eared Bat, pp. 59-60: The bat survey, and consequently the distilled discussion in the DEIS, are lacking in detail. The Keen's Myotis discussion discloses "[b]at surveys conducted during 2007, 2008, and 2009 . . . did not have the ability to detect individual species of bats." That species composition at the site could not be determined serves to emphasize that too little is known about the bat fauna. At a minimum, this lack of knowledge demands that there be post-construction studies to evaluate bat mortality and species composition of fatalities. Also, as (potentially) the first wind energy site to be built in a forest setting in the Pacific Northwest, this project should be used to study the impacts of such development on bats and birds. The U.S. Fish and Wildlife Service Wind Turbine Guidelines Advisory Committee draft report of March, 2010 states, "[o]ur current state of knowledge about bat-wind turbine interactions . . . does not allow a quantitative link between pre-construction acoustic assessments of bat activity and operations fatalities."[12] The report goes on to say:

> There is growing interest in determining whether "low" position samples (~1.5-2 meters) can provide equal or greater correlation with bat fatalities than "high" position samples because this would substantially lower cost of this work. Developers could then install a greater number of detectors at lower cost resulting in improved estimates of bat activity and, potentially, improved qualitative estimates of risk to bats.

Because the applicant sampled at a variety of sites and elevations within the project area, follow-up monitoring could contribute to the body of knowledge regarding the ability of various approaches to pre-implementation sampling to predict post-project mortality.

The Townsend's discussion states "[t]here are no known roosting structures or maternity colonies occurring in the vicinity of the project area. Consequently, the likelihood of occurrence on the site is considered to be low." The absence of evidence should not be assumed to be evidence of absence, especially in light of the caveat disclosed about inability to distinguish species during the bat surveys. This species (and many other bats) will roost singly in tree cavities or behind loose bark, so it is impossible to completely dismiss their presence at the site.

3.4.1.6 Other Wildlife Species

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[12] Wind Turbine Guidelines Advisory Committee. 2010. Wind Turbine Guidelines Advisory Committee Recommendations. US Fish and Wildlife Service Wind Turbine Guidelines Advisory Committee. Draft report to the Secretary of the Interior. March 4.

Birds, p.3-63: The DEIS states that "[m]ean overall bird use in the study area was low compared to these other wind resource areas studied; ranking 19th compared to 24 other wind resource areas . . ." This section should explain that comparisons to other wind resource areas in Washington and Oregon may be of little value as these other areas occupy different habitat types—primarily shrub-steppe and agricultural lands. Comparisons to sites located in Eastern deciduous forests are also questionable because of the different suite of bird species, different structural components to the surrounding forests, and dissimilar migration behavior.

Fall Migration Surveys (2004), p.3-64:

> Eight species of raptors were observed during the survey. Those with the highest use of the site were sharp-shinned hawk, Cooper's hawk, and red-tailed hawk. The highest raptor use observed at the site during 2004 surveys occurred between September 11 and October 12, 2004.

This observation is consistent with annual observations made at the Chelan Ridge Raptor Observation Project site in northern Washington, also on the east side of the Cascades. Raptors throughout the West migrate along ridge lines. Some ranges are located at geographic restrictions or at the confluence of ranges that funnel concentrations of raptors. Data do not indicate this is such a site, but do support the idea of a weak raptor migration through the area. Based on the number of raptors encountered during fall surveys, a rough estimate of the number of birds migrating through the site each fall should be made and included as part of the FEIS.

3.4.2.1 Proposed Action

Western Gray Squirrel, p. 3-75: This section suggests that the lack of oak trees in the project area indicates that the area has poor habitat quality for this species. In the northern part of the species' range, however, oaks are completely lacking. Accordingly, the absence of oak trees should not be used to conlcude that the squirrels are absent from a site.

Special Status Wildlife Species, p.3-77: This section introduces the collision risk model (or "bird exposure index" as it is called in the avian reports) from the avian survey reports. As discussed above, this model is highly suspect. The avian survey reports present numerous caveats when using this model or index: "This index is only based on initial flight height observations and relative abundance (defined as the use estimate) and does not account for other possible collision risk factors such as foraging or courtship behavior."

Reliance upon the Index is subject to criticism on several grounds. Intuitively, the model makes little sense.[13] The model also fails to account for the disproportionate impact of mortality on rare

[13] In the model, A = mean use for species is averaged across all surveys. Many species, especially raptors, demonstrate distinct seasonal use of the site. For example, a large influx of bald eagles into the Columbia River

populations.[14] The model also fails to account for many of the other variables that influence strike risk. These include size of the bird, speed of flight, and direction of flight, or weather conditions which could obscure blades or towers.

Ultimately, there is no indication that this model has any predictive value. Neither the DEIS nor the avian surveys indicate that this model has ever been tested in the field or been utilized prior to the construction of a wind energy facility, followed by post-construction surveys to verify its usefulness.

Given these limitations, any use of numbers from the index should be reported judiciously, sparingly, and with all the caveats identified in Appendix C and the DEIS, otherwise unqualified validity and strength are implied for these indices.

Other Wildlife Species, *Birds,* p. 3-79. The final paragraph in the bird impacts lists a host of caveats, which are cause for concern.[15] Although there is no geographic feature suggesting this

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Gorge occurs in the winter, and the DEIS does report that the bald eagle was more likely to occur on the project site during winter. However, the species' weight in the model would be greatly reduced by the number of data collection efforts made at other times of year. During most times of the year, the risk of collision for a species with strong seasonal occurrences would be zero—it just isn't at the site. On the other hand, at the peak of its occurrence at the site the risk could be far greater. Distributing the exposure risk across multiple seasons thereby presents a deceptive index of exposure risk.

The model contains two additional parameters: Pf = proportion of all observations of species i where activity was recorded as flying (an index to the approximate percentage of time species i spends flying during the daylight period), and **Pt** = proportion of all flight height observations of species i within the rotor-swept height. Both of these parameters are based on information captured at the moment of observation during field data collection. Data derived from the literature regarding each species' natural history and behavior could provide a more accurate picture of long-term behavior. As discussed earlier, almost all birds fly at some point during the day (one of the caveats in the DEIS for the model states "[i]f a species was recorded on the site, but never flying at all, then the exposure index would not be applicable") and at some point flight heights are likely to enter elevations swept by rotors. Both of these parameters likely suffer from small sample sizes of the total number of observations, meaning that statistically there would be little ability to accurately describe behavior based on the small sample size.

[14] Models such as this suggest that strike risk is reduced specifically because a species is rare at the site. To illustrate the point, the loss of one bird from a local population of two hundred (200) has little biological meaning. The loss of one bird from a local population of two (2) means 50 percent of the population is gone. Yet in each example, only one bird was killed.

[15] These caveats include:

> . . . the level of night migration for species associated with the project site is also not known.
>
> . . . risk analyses . . . provide some insight into which species are most vulnerable to turbine collision; however, estimates are based on abundance, proportion of daily activity budget spent flying, and flight height of each species. Observations were made during daylight hours, and do not take into consideration flight behavior or abundance of nocturnal migrants.
>
> . . . the analysis does not account for varying ability among species to detect and avoid turbines, habitat selection, or other factors that may influence exposure to turbine collision.

site constitutes a migratory bottleneck or should host a concentration of migrants, no effort was made to assess passerine migration, particularly at night (when most of these species migrate). In the absence of such an effort and in light of the long list of caveats associated with the collision index, post-construction monitoring and appropriate mitigation (should significant mortality occur) is warranted. Long term impacts should be assessed over a 5 – 10 year period because of our lack of experience with siting wind projects in Western forested ecosystems, and because of the inter-annual variability in migrating bird numbers.

Other Wildlife Species, *Bats*, p. 3-79: Bats are difficult to study. Nonetheless, the fact that of all the bats detected and all the species that could be present at the site, only the hoary bat was identified to species, leaves much information for the site lacking. The DEIS concludes (based on Appendix C reports) that relatively little bat activity was recorded at elevated heights, and two seasons of monitoring did not detect significant migrations. While these are good signs, the DEIS concludes "variable levels of recorded use by bats across years, habitats and recording height above ground indicate that the extent of impacts is difficult to predict at this time." This conclusion demands years of follow-up monitoring to assess actual impacts. As one of the first sites placed in a forested setting, such monitoring is particularly critical to understanding the environmental impacts of wind energy sites in forests.

3.4.3 Mitigation Measures

Post-Construction Avian [and Bat] Mortality Study: Given the large number of unknowns discussed above regarding both bats and birds, the avian mortality monitoring mitigation measure should be expanded to include bats and its duration should be expanded from 2 years to a 5-10 year horizon.

Research-oriented Studies: As one of the first wind power projects proposed for construction within a forested habitat in the Pacific Northwest, this project offers a unique opportunity to conduct research-oriented studies regarding the wind energy/wildlife interactions like the research studies identified in the WDFW Wind Power Guidelines (2009) and the USFWS Wind Turbine Guidelines (2010).

Adoption of USFWS BMPs: The proponent should adopt the Best Management Practices set forth by the USFWS Wind Turbine Guidelines Advisory Committee. Most of the BMPs suggested by the committee are already in the DEIS, but a good faith effort should be made to meet all of these guidelines to minimize project impacts. One BMP not presented in the DEIS includes appropriate lighting of on-site facilities (in addition to the towers themselves) to control light pollution and maintain the dark skies needed by bats and migrating birds.

As a result, actual risk may be lower or higher than indicated by these estimates[.]

The Technical Advisory Committee (TAC): As mentioned earlier, membership in the Technical Advisory Committee should include representatives from Audubon Washington or one of its member chapters, as well as representatives from local, federal and tribal federal and local environmental groups. The TAC should be convened for the life of the project, unless EFSEC determines otherwise.

Procedures for Responding to Avian and Bat Mortality Events: The mitigation measures should include the adoption of procedures specifying how the project will respond to large scale avian or bat mortality events or a take of a Bald Eagle or other species subject to protection under Federal or State law. These procedures should include timeframes for notifying relevant authorities (EFSEC, the TAC, and appropriate local, state and federal authorities) and measures to be taken to ensure no additional environmental harm occurs pending investigation of such an event, including curtailment of operations. Consistent with WDFW Wind Power Guidelines, the Applicant should contact the USFWS to determine appropriate measures to resolve un-authorized take of Endangered Species Act listed species or other species covered by other federal regulations.

Construction Monitoring: Mitigation measures during construction should include retaining an independent environmental monitor to ensure that all Best Management Practices and other mitigation measures are fully observed during the course of construction.

Mitigation for Lost Habitat: Arrangement should be made to mitigate for the permanent and temporary habitat losses caused by the project. Mitigation for permanent loss of habitat should be made on a one to one basis as provided for under the WDFW Wind Power Guidelines and should be developed in conjunction with WDFW and EFSEC.

3.4.4 Unavoidable Adverse Impacts

This section concludes with the statement "[t]he potential for ongoing occurrence of either golden or bald eagles is considered extremely rare." This statement is misleading. While both of these species appear to be rare at the site, surveys have documented their presence at the site. Moreover, both of these species are known to range widely in search of food, and bald eagles have been appearing in increasing numbers during the winter in a location that is only two miles away. Under these circumstances, the DEIS should state that periodic occurrences (in low numbers) of these species at the project site are predictable and are to be expected.

3.6 PUBLIC HEALTH AND SAFETY

3.6.2.1 Proposed Action

Construction, Fire and Explosion, p. 3-97: The wind turbine nacelles will be at a height of 262 feet. This section should discuss the technical challenges that are posed by responding to a fire, explosion or medical emergency at such a height, the types of emergency equipment necessary to respond to emergency events, and who (local fire departments, DNR or the Applicant) will be responsible for supplying and operating this equipment.

Operation, Fire and Explosion, p. 3-99: This section acknowledges that turbine malfunctions resulting in fires have been known to occur. Given that the turbines nacelle are located hundreds of feet in the air in a windy area surrounded by land being managed for timber production, it would appear that a fire could pose a serious threat to the project site and surrounding property. This section should be expanded to discuss the potential environmental impacts that may arise from a turbine fire and the actions that would be taken to minimize those impacts. This section should discuss whether equipping the turbines with fire suppression equipment is advisable.

3.6.3 Mitigation

Equipping the turbines with fire suppression equipment should be considered as a possible mitigation measure.

3.7 NOISE

3.7.1.3 Affected Environment

The Applicant intends to harvest trees in the vicinity of the project site prior to construction. This section should discuss whether the harvest of trees will affect the validity of the pre-construction sound study with a specific focus on the residential sites identified in the first paragraph of Section 3.7.1.3.

3.7.2 Impacts

This section should discuss on-site alternatives regarding the placement of wind turbine towers and potential noise impacts.

3.7.3 Mitigation

If warranted, mitigation measures should include removal or reconfiguration of turbines to minimize impacts on residential receptors.

If warranted, mitigation measures should include maintenance of vegetative buffers between the project and residential receptors to minimize sound impacts.

3.8 LAND USE AND RECREATION

3.8.1.2 Recreation

The Mark O. Hatfield Wilderness Area is within a 25 mile radius of the proposed project. Environmental impacts to this wilderness area should be identified and discussed in this section.

3.8.3.1 Proposed Action

Changes to Existing Land Use Patterns and Recreation, *Project Operation,* p. 3-151: In this section, the authors suggest that the project will not impact local agricultural tourism because wineries located in southeastern Washington are "thriving" despite the fact that there are four wind power facilities located between Walla Walla and Kennewick. This paragraph should be redacted. Correlation does not establish causation. Without more detailed analysis, the fact that wineries and wind power operations co-exist in Walla Walla County should not be used to predict the environmental impact of this project in Skamania County.

Consistency with Applicable Land Use Regulations, Columbia River Gorge National Scenic Area Management Plan, p. 3-154: Under the bullet point entitled "Scenic Appreciation and Scenic Travel Corridors," strike "only" from the discussion so that the sentence reads: "The project would have minor to moderate impacts on visual quality as viewed from travel corridors inside the Scenic Area."

Trails and Pathways. The discussion in this section needs to be clarified. The project will have low to moderate visual impacts on viewpoints from some trails and pathways in the CRGNSA. The statement that "[t]he project would not affect any trails or pathways in the Scenic Area" is incorrect.

3.8.3.2 No Action Alternative

If a No Action Alternative is pursued, there will be no impact on visual resources.

3.8.4 Mitigation Measures

This section should discuss reconfiguration or removal of turbines to minimize visual impact on scenic area as a mitigation measure.

3.8.5 Unavoidable Adverse Impacts

If the applicant is unwilling or unable to reconfigure turbines to minimize visual impacts, then this section should identify minor to moderate impacts on visual resources within the CRGNSA as an unavoidable adverse impact.

3.9 VISUAL RESOURCES

3.9.1 Methodology

The methodology applied should be expanded to include the Visual Resource Management system employed by the Bureau of Land Management. The CRGNSA has established visual resource objectives for a large and specific area within the Columbia River Gorge. Although the project is located just outside the scenic area boundaries, it will be clearly visible from within the scenic area and will impact the area's scenic values. That the project is located just outside the scenic area boundary should not exclude it from an analysis that fully identifies and discusses the project's visual impact on this nationally-recognized, high value regional view shed.

3.9.1.3 Preparation of Visual Simulations

The photographs underlying the visual simulations are problematic. Visual simulation photographs should be taken with a 50 mm lens, as this focal length most closely captures human visual perception. *See Environmental Impacts of Wind-Energy Projects,* National Research Council (2007) at 247. The use of other focal lengths distorts the image and makes it difficult to compare impacts between different photographs. *Id.* If a digital camera is used, it should be set at the highest resolution possible. *Id.* The visual simulations should also be re-sized to a 10 x 12 inch format, at a minimum, for comfortable arm's length viewing. *Id.* at 250.

Most of the simulations produced in the DEIS appear to be taken from viewpoints along roads and highways. Additional simulation should be provided with views from the Columbia River, hiking trails, and wilderness areas. *See Id.* at 251-52.

The DEIS states that simulations were not prepared for night time conditions. An inventory of current night time lighting conditions would be helpful in assessing the extent to which FAA mandated turbine lighting will impact the night sky.

3.9.2.3 Viewpoints

See comments under sections 3.91 and 3.9.1.3.

Columbia River Gorge National Scenic Area – p.3-194

Visual impacts are among the issues to be addressed in NEPA and SEPA analysis. Although Congress has expressed reluctance to apply Scenic Area restrictions to lands lying outside the scenic area boundary, land uses outside the scenic area will impact the visual quality within the scenic area and should be subject to visual analysis consistent with the values encompassed by the CRGNSA.

3.9.3.2 No Action Alternative

There is no evidence in the record that construction of project will result in an appreciable decrease in this region's development or reliance on fossil fuels or prevent the construction of such plants in the future. The assertion that failure to build the project will result in continued impairment of air quality and visual resources is not well-founded and should be removed from the discussion.

3.9.4 Mitigation Measures

In addition to painting the turbines an unobtrusive, non-reflective color and following FAA lighting guidelines, the following additional mitigation should be included:

- Either reducing or reconfiguring the turbine locations to minimize visual impacts.
- Explore whether vegetative buffers can be grown or maintained to minimize visual impacts.
- To the extent visual impacts are unavoidable, mitigation should include the preservation of off-site visual resources.

3.10 HISTORICAL AND CULTURAL RESOURCES

3.10 .2.2 Cultural Resources Overview

The FEIS should incorporate the results of archaeological field inventory conducted by Yakama Nation's Cultural Resources Department.

3.11 TRANSPORTATION

3.11.2 Impacts

This section should identify likely haul routes for concrete that will be used for the wind turbine foundations and discuss any associated environmental impacts.

3.14.3 CUMULATIVE IMPACT ANALYSIS

3.14.3.5 Habitat and Wildlife

Bird and Bat Species, p. 3-274: This section provides: "Erickson et. al. (2005) concluded that these sources of mortality [i.e., other anthropogenic sources] are likely much larger than the

potential impacts of wind power development." This statement of relativism is misleading and is not consistent with the intent of a cumulative impacts analysis. While on its face the statement is likely true, the question is whether wind energy, by adding incrementally to mortality, would be enough to negatively impact bird or bat species.

Discussion of West Cumulative Impact Study, pp. 3-275-76: The cumulative impact study prepared by West, Inc. for the Klickitat County Planning Department has contextual issues that need to be addressed. As the DEIS points out, habitat assessed by West for Klickitat County is significantly different from that at the project site. The DEIS states that "none of the estimated fatalities were anticipated to cause a significant loss in population, and no cumulative impacts were anticipated." Since the completion of the West report, however, the number of occupied Ferruginous Hawk nests in Washington has dropped precipitously.[16] The West report does disclose that this species could be at risk from wind energy facilities, and suggests that exclusion zones around core habitats might be warranted. In light of the current plight of this species, the "no impact" conclusion needs to be re-evaluated.

Another problem with the West report is that it focuses solely on impacts from the full build out of all anticipated wind development projects in the Columbia Plateau Ecoregion. While informative, this analysis misses the point of a cumulative impacts analysis, which is to evaluate the impact of the current project (in the West report, all anticipated wind energy development) in conjunction with all other reasonably foreseeable stresses on the resource – the analysis should have been wider ranging and not restricted to wind energy development.

Cumulative effects result from spatial (geographic) and temporal (time) crowding of environmental perturbations. The effects of human activities will accumulate when a second perturbation occurs at a site before the ecosystem can fully rebound from the effect of the first perturbation.[17] Fragmentation and habitat degradation are two of the major problems in the shrub-steppe. Development, land conversion, fire, incompatible grazing practices, and weed invasion are all driving mechanisms. The question of whether wind energy development in the Columbia Plateau Ecoregion could add synergistically to these sources of stress is not addressed in the West report.

The DEIS mentions that climate change is not evaluated as a source of stress. Climate change projections for Washington and the Pacific Northwest suggest dramatic changes in East-slope forests (as well as shrub-steppe), and these changes should be discussed in the context of cumulative impacts.

The cumulative impacts discussion in the DEIS concludes with the following sentence:

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[16] McCullen, K. 2010. Eastern Washington sees fewer ferruginous hawks. Tri-city Herald. May 9.

[17] Council on Environmental Quality. 1997. Considering Cumulative Effects Under the National Environmental Policy Act. Council on Environmental Quality.

> For example, one study from 2009 estimated that, based on performance in the United States and Europe, wind farms and nuclear power stations are responsible each for between 0.3 and 0.4 bird fatalities per gigawatt-hour (GWh) of electricity while fossil-fueled power stations are responsible for about 5.2 fatalities per GWh (Sovacool 2009).

The Sovacool (2009) paper appears to be fundamentally flawed in its assumptions. Willis et al. (2010)[18] published a rebuttal to this paper that would suggest that its premises are unsound. This line of reasoning should either be removed from the FEIS, or better supporting literature provided to support the point.

Thank you for this opportunity to submit comments on the Whistling Ridge DEIS. Please feel free to contact me if you have any questions or need clarification regarding my comments.

Sincerely,

H. BRUCE MARVIN
Assistant Attorney General
Counsel for the Environment

HBM:cv

cc: By email:
BPA (and by mail)
EFSEC (and by mail)
Al Wright
C. Robert Wallis
Jason Spadaro
Kyle Crews
Tim McMahan
Darrel Peeples
Tony Usibelli
Gary Kahn
Dorothy H. Jaffe
Nathan Baker
J. Richard Aramburu

[18] Willis, C. R., R. M. R. Barclay, J. G. Boyles, R. M. Brigham, V. Brack, Jr., D. L. Waldien, and J. Reichard. 2010. Bats are not birds and other problems with Sovacool's (2009) analysis of animal fatalities due to electricity generation. Energy Policy 38:2067–2069.

Robert Wittenberg, Jr.
Peggy Bryan
Skamania County Agri-Tourism Assoc.
Chris McCabe
Shawn Cantrell
Isa Anne Taylor
Jill Arens
John McSherry
David Poucher
Michael Canon
Don McIvor
By mail:
Save our Scenic Area
Klickitat and Cascades Tribes of the Yakama
Johnson Meminick

Michelle, Kayce (UTC)

From: [redacted]@aol.com
Sent: Friday, August 27, 2010 2:44 PM
To: EFSEC (UTC)
Subject: Re: Whistling Ridge DEIS Comments

Ladies and Gentlemen,

Thank you for the opportunity to submit comments regarding the above captioned proposed industrial wind generating facility in Underwood, Washington. I strongly believe that this proposed industrial facility clearly warrants a siting denial by your Council. There are fatal flaws in the concept, location, design, construction and operation of an industrial energy facility in Underwood, Washington and the Columbia River Gorge.

The concept of locating such a facility on ridge lines of dense old growth forested land is ill conceived for numerous reasons. It is of great importance that the approval of such a facility would have far reaching precedential repercussions, encouraging the deforestation and development of thousands of acres of both habitat and scenic resources. Developers are already viewing the potential for the development of similar facilities to the west, which could result in facilities scattered from the western Columbia Gorge to Portland, despoiling the natural ambiance of the area and reducing habitat, carbon sequestration and tourism. Your approval of an industrial facility impacting, but not technically in the boundary of The Columbia Gorge National Scenic Area (NSA) would set a precedent that could open the flood gates for any development visible from the NSA but not technically within its boundaries, including, but not limited to Las Vegas style casino signs, Space Needle type establishments, and high rise developments on formerly forested ridges. You have the power and authority to prevent setting the precedent that the Columbia River Gorge is open to a gold rush of industrial development.

The concept of ridge line deforestation and industrial development is also faulty in its failure to address additional factors such as the earthquake prone conditions of this area, the impact of blasting and construction on known water resources, including springs and aquifers. The steepness of the proposed site, once deforested further, will result in unacceptable water run off, erosion and extreme habitat loss.

The concept of clear cutting thousands of acres of old growth forest for industrial development in favor of select harvesting is ecologically and economically unsound for this region. Alternative sites that have already been cleared and that do not impact the scenic value of the Gorge are plentiful and should be preferred to the siting of the current proposal.

The concept that one developer's desire to achieve "economic diversity" at the expense of the impact of the project to Gorge wildlife, residents and tourists of both Washington and Oregon is selfish at best, arrogant at worst. The concept of this proposed project is fatally flawed and siting of this proposed industrial facility should be denied.

The location of the proposed project is also fatally flawed for many of the reasons discussed previously and for additional reasons. The proposed location will severely impact local Underwood residents. You are aware of the numerous non wind industry sponsored studies detailing both physical and mental health impacts on both adults and children, so I will not reiterate those findings.

Please do not discount the life altering effect that an industrial energy facility will impose on local residents. Please do not credit the wind industry sponsored studies that such a facility would not negatively impact home values severely. Really, would any of you chose a residence within close proximity to 425 foot loud twirling lighted structures if given the choice of an equally pleasing quiet rural residence unencumbered by such structures? I think not.

The proposed location of the project also discounts the very real threat of fire in what is now a strictly no burn tinder box. This location is not a flat insured wheat field. This location is a forested steeply graded terrain which is home to a wide variety of wildlife, domesticated livestock and people and their homes. Both construction and operation of an industrial facility poses an unacceptable threat to the aforementioned as well as to travelers and the very scenic vistas that make up the Gorge. The location of the proposed facility by its very nature would be difficult or impossible to adequately access with fire fighting equipment. The helicopter water drops so instrumental in fighting the Underwood fire of the summer of 2008 which destroyed trees, vegetation, wildlife and homes, would not be available for use in and around the proposed structures because of the proximity prohibition for helicopters and turbines or towers. A developer's pet project should not instill fear and concern and potential devastation to the surrounding inhabitants and a potentially severe loss of scenic value to the Gorge community and tourists.

The proposed location is flawed for reasons of cumulative impact. Existing industrial wind facilities and the rate of development of additional industrial wind facilities in the surrounding areas to the east have created an unacceptable cumulative impact on the wildlife populations of the area, as well as for many of the residents. Approval of the proposed WRE project would exacerbate this effect due to its established migratory paths as well as the non migratory bat and avian populations, not to mention the wildlife habitat devastation that would result from the sheer amount of deforestation required.

The proposed project location is ill conceived from another cumulative impact circumstance. Recent legal and government decisions related to the Broughton Mill resort and the Cascade Locks Casino make it possible that those facilities could become a reality. If so, the cumulative impact of these establishments, coupled with the construction of an industrial wind facility (and the precedent for other industrial developments) in a relative proximity to each other, could cumulatively negatively impact the Gorge in ways that we cannot now fully conceive. We must be good stewards of this national scenic area, not its destroyers.

The design of the proposed facility is fatally flawed for lack of statutorily required alternatives and insufficient mitigation analysis.

The construction of the proposed facility would entail unacceptable traffic and emergency response impacts for residents and visitors to the NSA, particularly to key viewing points in the Underwood area. Construction of this facility would create unacceptable impacts on ground water supplies, and contribute to the already high fire hazard.

The operation of the proposed industrial facility raises unanswered questions regarding the use of the power generated and the ownership of the facility. It is common knowledge that 80% of the wind power generated in the northwest is sold outside of Washington, principally to California, and thus not contributing to Washington's mandated green energy requirements. It is also common knowledge that a high percentage of the smaller wind energy facilities themselves are sold to out of state buyers, or are under contracts for sale to such buyers who frequently employ their own in-house employees, not resulting in local permanent jobs. Is the proponent's staunch resistance to alternative designs related to a minimum output required for just such a sale? Should the residents and visitors to the Columbia River Gorge National Scenic Area be subjected to the intrusion of the construction and

presence of an industrial wind energy facility that statistically is likely to become owned by an out of state entity that sells its power out of state?

The Whistling Ridge Energy proposed project is the wrong project for the Gorge, at the wrong time and wrong
place.

Sincerely,

Rebecca Maxey
[redacted] Cook Underwood Road
Underwood, WA 98651

Michelle, Kayce (UTC)

From: Leslie Burpo [redacted]@aol.com]
Sent: Friday, August 27, 2010 3:17 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Leslie Burpo
P.O. Box [redacted]
Eugene, OR 97405

Michelle, Kayce (UTC)

From: sallie tucker jones [redacted]@gmail.com]
Sent: Friday, August 27, 2010 3:24 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Draft EIS Comments
Attachments: August 15 comments re Wind farm.docx

Hi Tammy, I hope this works. Thanks for your help, Sallie

August 26, 2010
[redacted] Thuja Narrow
Washougal, Washington 98671-7406

Washington Energy Facility Site Evaluation Council
905 Plum Street
Olympia, Washington 98504-3172

Re: Whistling Ridge Energy Project May 2010 Draft Environmental Impact Statement

Members of the Council:

Thank you for extending the deadline for comments. Although it arrived at the very last minute, it was a generous extension and I hope that you will also extend the time you will take to review what I imagine will be the many additional submissions.

For the following reasons, as well as those that others have taken the time to bring to your attention, I strongly feel that a completely revised document must be created to stand as an accurate and unbiased presentation of information that Council members can use to make an informed decision regarding this proposal.

The existing document shows a lack of professionalism in many important areas that is inappropriate to both the SEPA/NEPA requirements and the process, as well as to the scale and potential impact of the proposal upon the region and its varied resources. Following are a few of the things that I find the most disturbing. Thank you for considering them when the Draft document is revised.

Section 1, 1.1, Pg 1 Para. 2 Interconnection and **Section 1, 2.2 Pg 4 BPA Purpose and Need for Action** I do not believe that BPA has yet responded to the request for interconnection. The nearby BPA transmission lines are at carrying capacity with a backlog of other requests for interconnection. Although the location is referred to in Section3, the precise location for the proposed Whistling Ridge Project interconnection is presently unknown, since no new transmission line has yet been constructed, nor has firm commitment from BPA to existing lines been granted. This renders the cumulative impacts assessment incomplete. It is also incomplete with respect to several other facets of this proposal as well. The BPA new line access corridor construction and interconnection costs, design and placement of any collector substation and interconnection structure, as well as an evaluation of the resulting environmental impacts of their construction and operation would be legitimate, mandatory elements for inclusion in this document.

Since BPA is partially responsible for the DEIS document, it should not be problematic for the agency to include an open and clearly understandable discussion of the agency's present interconnection problems as they relate to the current proposal, thus clarifying this aspect of the EIS. There is discussion of possibilities that were considered but rejected, however, the option finally chosen appears to be questionable, especially since BPA has offered no firm commitment.

Section 1, 2.3.2 Pg 6 ".....it is critical to locate projects in areas where transmission lines currently exist. The applicant thus needs to locate near existing high-voltage transmission , such as the FCRTS." As noted above (in Section 1, 2.2 notes), the currently existing BPA transmission line is running at capacity, with no possibility for the addition of large additional sources, such as this project's proposed output would comprise.

The critical issue regarding wind facilities is indeed appropriate siting, but not for the reason of proximity to transmission lines. The applicant (I assume this is the author) misunderstands the basic premise and need for an environmental impact statement. The lack of transparency regarding this issue is disturbing, and should be clarified in the BPA discussion of the issue, rendering this claim invalid. It should be removed from the document; it appears repeatedly in all Sections.

Section 1, 2.3.3 Pg 6 Business Needs of the Applicant An EIS is not a branch of any chamber of commerce nor is an EIS a forum for advertisement. The history of the applicant/company is already included in the Appendices. Other local background information is included in Section 3, 3.10.2.1 Historic Background and this is where it belongs. Every company has business needs but this is not the arena for such discussion. This heading and its text should be removed.

Section 1, 3.2 Pg 7 "The EIS will be used primarily to inform...." As it stands, I do not feel this document yet contains the essential information needed for informed, responsible decision-making, especially in the areas of wildlife impacts, soils/geology and cumulative impacts analysis. It must be improved significantly before it can serve its intended purpose. This may take more time, but it will certainly ensure that the final EIS is a more suitable document for unbiased decision-making, which at this point it is not.

Section 1, 3.3 and 4 Pgs 8, 9 NEPA Section 102 (2) (c) requires that alternatives to the proposed action be provided. There are **no** Action Alternatives offered in this document (the No Action Alternative is not considered a viable alternative.) Alternatives must be presented and discussed as real possibilities, not avoided by stating that alternatives were "considered but eliminated from detailed study" as is stated in Section 1, 4.3. The Applicant cannot choose to avoid this requirement. Although it is stated several times that the document "... is intended to fulfill the format and content requirements " of a joint SEPA/NEPA EIS, it falls well short in many areas.

Section 1, 4.1 Pg 9 Proposed Action The project site is stated to have a "proven, robust wind resource." There is no material to supply this "proof in the EIS document. If "robust " is interpreted to mean "good", then this statement is doubly inaccurate. The web-based National Renewable Energy Lab regional wind power mapping resource states that the proposal area provides only "marginal to fair" averaged wind resources compared to other sites in the state. The good to excellent areas are farther east. A BPA (among others)-sponsored wind mapping project on the Internet shows the area to have not particularly good wind resources as well.
The wind mapping data, referenced above, conflicts with the applicant's claim that the project site has a "'proven, robust wind resource." No scientifically stringent data is presented that supplies this "proof." This "proven, robust" ("steady") terminology appears repeatedly throughout the document and is misleading. A credible document needs to show at least an attempt at accuracy and objectivity.

There are other reasons as well, discussed on the following pages, that indicate the selected site may be a poor choice for a wind facility. Paramount to these, is the technical geologic study of the project site that has not yet, and must be been performed before suitability evaluations begin.

One of the factors that the Applicant used to identify site suitability was stated to be the "associated lack of native habitat, reducing or eliminating the need to clear additional forest land." Section 3 discusses the initial "need to clear trees to prepare ridge top sites for construction of turbine base pads and of specially configured parts delivery roadways. Information is even provided regarding where the logs will be taken after being cut. The applicant needs to choose one statement or the other and ensure that references to the eliminated statement are removed from the document as well. Which will it be? A credible document displays consistency.

A current aerial photograph of the steep (70% or more) southern side of the project area, in the vicinity of proposed turbine string A1 – A7 shows standing trees that were restricted from being cut by Washington State DNR when the applicant applied for a Forest Practices Application permit in 2003. What were the constraints that prevented this harvest? Will project approval permit the cutting of these trees, in order to clear for turbine pads and access roads, overriding the earlier DNR prohibition? The Council would need to investigate the nature of the DNR constraint before the evaluation process proceeds.

Again, mention of the alleged availability of nearby BPA transmission lines as a site selection factor: transmission lines that do not have the capacity to carry significant additional power. This issue needs to be clarified as discussed under " **Interconnection**" on pages one and two.

Lastly, the site was stated to have been chosen because it is close to an SDS mill site (even though it was stated above that no additional trees would have to be cut for the project) and to SDS business offices! Surely this declaration could be deleted lest it be concluded that convenience has a higher value than environmental factors when choosing a suitable location for a wind power facility. Perhaps if the reasoning behind the statement was elucidated, it might seem an appropriate inclusion.

Section 1, 4.1.2 states that a trench, approximately 8.5 miles long and 5 feet wide would be required to place collector cables. The DEIS mentions reseeding with of grasses and native plants, but does not mention what species, nor whether trees or shrubs that were removed would be replaced in-kind. If the plantings are to minimize noxious weed colonization would the reseeding areas be watered to ensure germination in time to counteract opportunistic germination of undesirable species? If so, the amounts used should appear in the Section 3 water use list and a watering regieme presented.

Will the removed soil be compacted as it is returned to the trench? Will the soil returned to the trench be returned in the same order that it was removed? What will the compaction guidelines entail? Who ensures that it is done properly? Since this extensive trench will likely disturb underground water flow patterns and create new, possibly undesirable flow patterns, it may be important to consider imposing certain requirements and ensuring that agency inspectors with authority to enforce , not proponents or contractors, oversee the work.

Section 1, 4.2 Pg 12 No Action Alternative To state that the No Action Alternative "would not help the state of Washington in achieving the renewable energy goals mandated by the state's Renewable Portfolio Standard" is misleading. Washington State wishes to encourage renewable energy, but not to the exclusion of all else. Site selection is probably the most important way that negative environmental consequences can be avoided, especially with respect to wildlife. Moreover, BPA does not segregate power sources. Once it is produced and fed into the collection system, it is dealt with as any business commodity, in this case by bids. Much of the power we create here is used elsewhere, historically, to California. To imply that a rejection would flout state goals and policies is simplistic and a little misleading.

"(The No Action Alternative) would help to meet the region's need for additional power in the coming years." If by "region", "local" is meant, our regions need is not great. The Columbia River, and other water-driven power-generating dams continue to supply more than ¾ of our power needs. The current trend is to improve efficiency and to encourage both business and the private sector to conservation. It has been estimated (Draft Sixth NPP, 2009) that almost 80% of our locality's future energy demands can be met in this way. Existing and newly approved wind facilities in the region, with a focus in Klikitat County, are more than adequate to make up the difference. It would be not only misleading but inaccurate to state or imply that there is a "need" for additional wind power in this portion of the Northwest.

Section 1, 4.3 Pg 13 Alternatives Considered but Eliminated from Detailed Study The applicant's response is in violation of the guidelines by virtue of not complying with the requirement to supply Alternatives. As mentioned above, an EIS requires that alternatives be provided and considered, with accompanying data and analysis to match all of the other Action Alternatives presented.

Section 1, 4.3.1 Pg 13 Alternative Project Locations The contents of this portion are redundant. Again, it avoids the EIS requirement regarding Alternatives. The points made here have all been stated previously (Section 1, 4.1), in the same bulleted form and with almost the same wording.

Section 1, Table 1 Pg 22 Earth: Construction: Design and Mitigation Measures All of the Design and Mitigation Measures listed are "would be" statements. They "should be" already part of the EIS! If, for instance there was a critical subsurface condition, it needs to be known and factored into the decision process, not "discovered" after approval. Only in this way can accurate and responsible evaluation occur. Because of the difficult terrain, there would appear to be very little possibility for adjustment, should geologic constraints be revealed initially. This could easily endanger the viability of the project, which underscores the importance of having data collected from rigorous studies, and analysis conducted by respected sources. Even with the added benefit of such information, the impacts of such radical alterations to a fragile topography can only be guessed. Stringent geologic study of the proposed site must be performed now and the results reported in another, hopefully improved Draft document. This information will be essential for the Council's evaluation. Without it, the process will have no merit.

Section 1, Table 1 Pg 22 Earth: Construction and Operation – The considerable alterations to the terrain that are proposed for this project - 8.5 miles of three to four foot deep, five foot wide trenches for cable burial, 30-foot deep turbine pads that will require leveling with machinery and extensive blasting to excavate, the building of adequate access and delivery roadways on steep slopes - will certainly have more impacts, and ones that influence each other more closely, than

those listed. The changes made to accommodate the towers will forever alter the ridge tops and they will not revert to their pre-construction profiles after the project is decommissioned. It is inaccurate as well as disingenuous to state that the project construction requirements would be "minor to moderate."

Why is volcanic ash deposition of such concern that it is mentioned here? Granted, several of the soils present do contain a volcanic ash component, but it is not clear to me why this appears, since there is no control over the possible event and, depending on the severity of an ash fall, no mitigation measures would be possible. Large amounts of ash could be physically removed, but would that be mitigation?

Does the statement regarding mass wasting " No obvious recent mass wasting features" imply that there is evidence of the phenomena having occurred on the site in the not-so- recent past? If so, then this is another reason why a more thorough geologic assessment be conducted, **before** the project is evaluated by the Council.

Although the soil type present on part of the project site has low liquefaction potential, massive excavation and refill, as in the 8.5 mile trench , may disturb soil structure enough to render the possibility greater than in the undisturbed state. Although liquefaction of soils are generally associated with earthquake activity, a similar phenomenon may result when soils become over-saturated. As mentioned above, there is no doubt that the proposed excavated and refilled trench will impact and redirect existing subsoil water flows for 8.5 or more miles and may potentially influence an area far greater than the area of the trench. It is also possible that drainage may be improved in the trench after refill, but the possibility that it will not, must be at least considered.

Section 1, Table 1 Pg 22 Water: Construction and **Operation** On-site development will certainly impact ground and surface water drainage patterns as indicated above. It is well- recognized that new roadbeds alter water flow significantly and are responsible for a good deal of continuing erosive runoff. The replacement of natural soil and rock drainage on the site with impervious concrete pads constitute large surface areas that will prohibit slow drainage. Water will be quickly released from these surfaces in large quantities at approximately the same time, limiting the remaining soil's ability to absorb and release it slowly. Some of the remaining soil may be additionally compacted from heavy construction machinery, limiting even more its ability to absorb rainfall and melting snow slowly.

Section 3 downplays the impact these impervious surfaces may have upon soils, but this need to be seriously examined. Each of the 49 tower pads have a diameter of 60 feet, creating 2920 square feet of impervious surfaces at the top of steep ridges. , These conditions produce fast runoff accompanied by high erosion which, over time may lead to catastrophic geologic events, as well as degrade waterways used by fish, amphibians and invertebrates. Amend this inaccurate denial of the project's impacts to ground and surface waters. A discussion, or at the very least a mention of the runoff potential should be presented, as well as possible impacts to the larger streambeds below, with potential to impact fish, amphibians and invertebrates, upon which fish depend for food. Larger game and non-game animals may be impacted as well through water quality degradation and the possible inability to even reach water. The standard BMP guidelines will not be adequate for this anticipated situation. In recognition of this, an individual plan to accommodate the special runoff problems of the project could be developed as part of a mitigation plan, implemented and monitored by an agent other than the applicant/contractors, if

the project is approved. The cumulative impacts discussion should deal with this possibility as well, but does not.

Section 1, Table 1 Pg 24 Biological Resources: Construction Soil compaction is an undesirable and irreversible impact that should be acknowleged since it affects soil drainage, the ability of certain plants to grow well and limits the species of plants that will grow.

In addition to "loss of suitable habitat," abandonment of adjacent suitable habitat due to construction activity should be considered a likely possibility. Some bird, mammal and invertebrate species are known to be more sensitive to intrusive activities, including noise, than others. Several of these species are listed as being present in the project area. Add "abandonment of suitable habitat due to construction activity" to the list on page 24.

Section 1, Table 1 Pg 24 Biological Resources: Operation "There would be some mortality to birds and bats due to turbine collision and displacement, though not in sufficient numbers to affect population viability." I restrain myself when I say that this statement is offensively inaccurate. It also reveals the applicant's misunderstanding of the "cumulative impact" concept. As wind farms proliferate in our region, the cumulative mortalities become increasingly significant for individual populations, regardless of their population status.

Just because there have been no studies addressing bird population declines in association with wind installations does not mean that one has a legitimate claim to deny that such a relationship may exist.

The bat studies cited, employed equipment that was not capable of determining the bat species e present. How then, can an assessment of a particular population be made? Or, by extension, a statement regarding population viability? What authority provided the status information for each population? What is the source of data for western bat species population size? Eastern bat species are being threatened with mass extinctions from White Nose Syndrome, the etiology and causative organism of which is still unknown. The disease has not yet reached the western states; because of this, it is essential that ALL western bat populations be given added protection, regardless of their population status. The bat study data is inadequate in certain respects; the study plan assumptions were not adequately rigorous, there were discrepancies in data collection procedures from year to year, making comparisons and data merging ineffective; long-term sampling frequency was sparse. At the very least, a repeat survey should be conducted which would identify bat species.

The Columbia River Flyway is a major East to West migration route that has likely been used longer than mankind has been here. Raptors are known to use mountain ridges for North/South travel as well as for hunting in this part of the Columbia River. People come from many places outside of this area specifically to see the variety of birds that congregate and fly through this river corridor, some stopping to feed for a few days or weeks before moving on. This site would be an unconscionable choice for a development of this kind, with this knowledge.
"No impacts to listed species" – is this a wish, or a promise from an unknown deity? How can it possibly be known ahead of time that a listed species will not be impacted; especially when inadequate studies have failed to identify what species use the area and with what frequency? And when only a two year start-up mortality study is planned? This is not enough time to obtain meaningful data much less to make any conclusions from the data. The project location would be

an especially difficult one for such monitoring due to the terrain and planned forestry understory management activities. A recent eastern U. S. mortality study is employing dogs to find bat carcasses, because they are so difficult to locate by eye, even in dry flat grassland.

There is no body of information available documenting how wild animals might respond to the sound of wind turbine propellers. This should be at least briefly discussed and dealt with as a possible impact.

Section 1, Table 1 Pg 24 Biological Resources: Design and Mitigation Measures "In order to avoid or minimize impacts to any raptors potentially nesting on or near the project site, a raptor nest survey would be conducted ....." Then what? A survey is not a mitigation measure.

The composition of the proposed Technical Advisory Committee members is not well thought out. Entities or personages that have vested interests or have demonstrated no interest, cannot be relied upon to make responsible, nor to make informed mitigation recommendations. To include the developer on such a committee would be unwise as well as unfair to the resources. If this route is pursued, enforcement capabilities must be granted and there must be a preponderance of resource advocates as committee members. TAC groups are by reputation, generally ineffective when they have no powers. They are also rendered ineffective if members have conflicts in interest, as counties and developers often do. This would be a great opportunity to cast aside TACs, breaking out of the customary mold and devising a new and more effective way to resolve monitoring and mitigation issues associated with such a project.

"For potential impacts to big game species (deer and elk) coordination with WDFW will occur if appropriate." Again, just to mention something does not comprise a mitigation measure. What about bears, and large cats? Who decides if a situation is "appropriate" warranting consultation? Under what circumstances would it be appropriate to coordinate? The project location is a designated wintering area for elk. What plant species are present that elk might use for winter forage? Will these species be replanted and therefore present in adequate quantities to continue to serve as winter forage during construction and operation of the proposed project? These considerations must be treated responsibly somewhere in the document. The quoted statement is vague and obtuse. It leaves the reader with **no information** about how big game species ' use of the area will be approached, nor does it correct nor solve any problems big game species may have because of the project.

Section 1, Table 1 Pg 25 Energy and Natural Resources: Operation The "Minor quantities of lubricating oils....." should be specifically quantified, if only as an estimate, to be consistent with the remaining listed items.

Section 1, Table 1 Pg 25 Environmental health: Construction The project is located at the southern end of a wide contiguous band of lands termed "Fire-prone Landscape Management Strategy Area" by a USFWS 2008 Final Spotted Owl Recovery Plan map. This area runs from the Columbia River north to the Washington-Canada border. The increased risk of fire during the summer months must be seriously considered and aggressive prevention measures **above the usual standards** should be pursued and stipulated.

Prohibitions on conducting potential spark and fire-generating activities during the driest fire danger periods of the year could be part of a plan keyed to this project and would demonstrate

care and concern for nearby communities. A several month delay in certain construction activities and equipment use as a result of time-of-year prohibitions would be well justified and need not halt all building progress.

There WILL be blasting activity in association with this project, if approved. Getting rid of the "may" and "could" in the bullet dealing with blasting would be a more honest way of stating the realities of the massive environmental reshaping that this project will engender. If "Blasting could also create a fire hazard during dry weather", then this activity should be curtailed during these periods. Likewise, an activities plan related to the regional weather patterns might suggest avoiding blasting during unusually wet times of the year to avoid problems similar to those encountered recently along Hwy 14. There is no doubt that the level of blasting activity alone has the potential to seriously destabilize this particular environment, which, as noted elsewhere, already has nearby unstable loci. Since there is no geologic assessment data provided, it is impossible to even guess what impacts such activity could produce. When the geologic assessment is conducted, it should address not only immediate impacts but the potential long-term impacts of blasting, even although this would only be predictive. Road department records from Underwood and Hwy 14 should give the Council a good idea of the areas' historic instability.

Section 1, Table 1 Pg 25 Environmental health: Construction (Column 4) The second, bulleted statement in column 4 implies that a fossil-fuel- powered facility might supply fill-in power when a wind facility is unproductive (and that it would carry a higher risk of fire.) There is a federal requirement mandating that alternative power source facilities must accompany any new wind facility, based upon the amount of power generated. The proposed wind project would generate above the MW threshold, requiring the construction of an alternative power-generating facility to balance a wind farm's unproductive periods of no wind or too high wind. The construction cost of this requirement building, inter-tie costs, should certainly be included in the cost analysis for this project, but it does not appear. Since the alternative power facility is a requirement , its location should be identified and the associated environmental impacts need to be included in the EIS, including the cumulative impacts portion.

Section 1, Table 1 Pg 26 Environmental Health: Operation Again, with respect to fire potential, local ordinances and other regulations and standards are not directed to such a project, and are not adequate, because of the unusual situation. An individually tailored, aggressive fire prevention plan and response tactic needs to be developed for the construction and operation phases of this proposed project. Relying on existing regulations will not adequately address the specific potential hazards nor protect the nearby population and environment.

"...none of the planned turbines are within 2,500 feet of existing residences." This is not correct; there is one residence. Mitigation measures should be included in the proper column.

"EMF from the project ...would have no health and safety impacts." I do not see any information in the document to support this assertion. There is certainly study regarding the issue, but conclusions are not definitive at this time. Can a pronouncement be made if there is inadequate documentation? Unless this can be produced, this statement needs to be removed or qualified in some manner in order to be objective.

Section 1, Table 1 Pg 27 Noise: Construction This section downplays construction noise, which will carry well into the valleys and bounce off of adjacent hillsides. Although construction is stated to occur during daylight hours, it will likely begin very early and continue through dusk.

The added noise of myriad transportation trucks will certainly impact local residents on a daily basis and should be included in the list.

The noise from blasting will certainly be noticeable and will last for awhile. In thoroughness, it should also be mentioned.

Section 1, Table 1 Pg 27 Noise: Operation An in-depth submission regarding wind turbine noise impacts upon humans has been submitted. Please consider it as a counter to the data presented in the EIS and take appropriate action to modify the table.

Section 1, Table 1 Pg 33 Socioeconomics: Operation There are several studies that identify undesirable affects of turbines upon humans (see K. Brown's testimony citations). One would not unreasonably conclude that properties in close proximity to such turbine arrays might be less desirable for habitation, at least to a percentage of the population. Proponents of wind power have issued statements derived from studies indicating that property values are not adversely affected by nearby wind turbines. As such studies continue, depending on the analyses, certainly there is the possibility that property values may be affected one way or another, but for now either position can support and document its claims.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts : Earth The enormously disruptive activity that will be required to complete this project, located in a geologically fragile environment that has already been subjected to considerable alteration, is very likely to respond with undesirable events. In potentially susceptible areas, no amount of "careful design" can prevent, nor can "mitigation measures" restore, areas where mass wasting has occurred. It should be added to the list of potential adverse impacts, especially since evidence of such an event was documented during a previous survey. The severe re-contouring, blasting, large-scale trenching and creation of impervious surfaces all increase the likelihood of minor or major responses from the environment. The soil types in some areas are acknowledged to be susceptible to erosion and the proposed "A" array is located precisely along a Class II (High Landslide Hazard Area) ridgeline. To dismiss these and other known geologic concerns with the two brief dismissive statements presented is unacceptable. Until a reputable geologic assessment study is performed, there will remain a glaring gap in this arena. Without professional scientific data, any predictive statements can only be considered arbitrary and of dubious merit.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts: Air Quality Construction activity would involve many more pieces of diesel-fueled machinery than any logging operation. It is absurd to think that the residents of the town of Underwood will not notice, nor be affected by, a continuing stream of diesel trucks heading up and down the roads every day for months. Peak morning hour numbers of trucks are estimated to be 210/hr for 3-5 months. Further, all major construction equipment is to be diesel-powered (Section3 Table 6-5, Pg 109 Fire and Explosion Risk Mitigation.) It is disingenuous to claim that this would be comparable to "existing logging operations.", and equally so to state that "the project would contribute to a beneficial impact on overall air quality" Climatological data presented in the EIS indicates that the area is prone to air stagnation at all times of the year, but especially during the summer when pollutants from downriver may collect forming considerable haze. Even if this statement refers to the completed project, it is a bit of a stretch to claim "beneficial impacts on overall air quality" when the requirement to build alternative fuel power plants are a direct result of building wind powered

facilities. With this in mind, it might be fairer to consider that project would lead to a decline in overall air quality.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts: Biological Resources See previous comments regarding bats and birds (Section 1, Table 1 Biological Resources: Operation.) The Summary statement simply reiterates the document text statements, almost word for word, imparting the same inappropriate lack of concern. Why are no other wildlife groups mentioned? Certainly animal corridors will be interrupted, the areas in which young are raised may be pushed further away and populations may become fragmented. Even with the proposed mitigation measures in place, erosion runoff would affect the fishery and invertebrate communities downhill of this project. Blasting may obliterate pika or marmot populations that may have been overlooked. No mention of them occurs in the animal surveys. These could be significant impacts unless there is some oversight to ensure that mitigation measures are maintained to the standard for the duration of construction. Often, self-policing measures produce initial compliance, but over time may be seen to deteriorate.

Section 1, 8.2 Para 1 Pg 37 The last sentence in this paragraph appears to more of a running prepositional phrase. It is awkward and could be recast for a more professional presentation.

Section 1, 8.2 Para 2 Pg 37 The first sentence of the second paragraph is incomplete and needs structural as well as subjective clarification.

The last sentence of this paragraph still stretches my imagination – how will "introducing up to 75 MW" of wind power "contribute to efforts to improve air quality in the Columbia River Gorge vicinity?" If anything, fossil-fuel facilities will be **added** (producing a negative effect upon air quality) to make up for the irregular output of this wind facility.

Section 1, 10 Pg 38 References Again, BPA's Wind Integration Plan might be an excellent addition to the references section if it might clarify the line access and interconnection issues.

Section 2, 1.4.1 Pg 9 Construction Activities "Transportation of construction materials" (gravel, concrete, rebar, etc.) could be added to the list but "Use of dynamite and machine re-contouring of ridges" should be added to the list.

Section 2, 1.4.2 Pg 12 Construction Schedule Earlier portions of the document state a construction time of one year. This section states "approximately 15 months" would be required for construction ; all other sections repeatedly mention one year. Consistency throughout the document would enhance credibility. Are the construction cost estimates based upon 12 or "approximately 15 months?" The suggested time-of-year prohibitions to pro-actively address fire danger could be inserted into the detailed construction schedule, possibly changing the time frame even beyond 15 months.

Section 2, 1.4.4 Pg 13 Construction Costs An extra three months or more added to the construction time estimate of one year stated early in the EIS will add to the construction cost estimate presented in Section 2, 1.4.4 Pg 13, assuming that it is based upon a 12-month time frame.

Another cost that has not been discussed, although it may not be considered a bona fide construction cost, is that of the required alternative/fossil fuel facility that would make up for non-production times at the wind facility. Interconnection, substation and line link costs associated with this facility should be also be added and later considered in cumulative impact analyses. The total cost of building an alternative power supply facility to offset erratic wind generation is possibly not the responsibility of the applicant, but possibly some monetary responsibility exists? Who pays for the construction of such a facility? Is the cost partially subsidized? If so, by whom?

Section 2, 1.5 Pg. 14 Project Operations The project is stated to "operate 24 hours per day, seven days per week," implying that generation also occurs on that schedule. It might be a bit more objective to modify the statement to reflect the reality of wind power generation for those who do not know.

Is there any capability
The first U. S. study of reduced (bat) fatalities and economic costs of "low-wind mitigation" began in 2008,continued in 2009 and 2010. The research is being conducted in Pennsylvania with Casselman turbines and has demonstrated that bat fatalities were reduced an average 73% when turbines were left off-line, at night, during low wind conditions (<11.2 – 14.5 mph). An additional benefit to bats was to use the nighttime limitation during the migration season in the fall. The second year of the study, 2009, was funded wholly by USFWS. I will provide the Council with the citations. The calculated loss of production resulting from the temporary stoppage in that area of the country was 0.3 to 1.0% of the facilities' yearly output.

Some studies have indicated that certain individual towers in an array produce more mortalities than others. Will this project have the capability of shutting down a single turbine? Will it be possible to shut down individual arrays in this project? Will the strategy above be a possibility for these turbines or is their operation wholly automatic? What would the cost difference be if this capability was part of the design plan for these proposed turbines? This approach might be one that could be applied to bird mortality as well.

Section 2, 3 Pg 19 Alternatives Considered but Eliminated from Detailed Study As in Section 1, the applicant has substituted a list of self-generated criteria instead of fulfilling the mandated subject matter identified in the heading.

Section 3, 44.1.5 Special Status Wildlife Species Northern Spotted Owl Although the two historical northern spotted owl nesting sites at Moss and Mill Creeks, near the northern boundary of the proposed project are not believed to be presently occupied, these areas still carry the potential for occupation and use. Little is known about long-term northern spotted owl reoccupation patterns and current agency attempts to halt population declines are not encouraging. Forested habitats that have supported northern spotted owls in the past are likely to support a diverse suite of life forms and hold the potential to support one another, given enough space.

The proposed project is located within one of Washington States ten designated SOSEAs (Spotted Owl Special Emphasis Areas.) Although the project location and proposed construction activities do not impinge upon the parameters specified in the state regulations regarding SOSEAs, a favorable decision for this proposal would lead to extensive re-contouring and dynamiting the

outer boundary of a select habitat resource. Regardless of the legality of the proposed actions, to actually go ahead with the proposed habitat alterations would seem to flout the intent of the regulation. Eliminating the northern portion of the B array and the entire C5 to C8 array might allow the outer edges of the historic nest range that overlap the project boundary some protection as well as respect the spirit of the SOSEA. This might even serve as one of the as-yet-unsupplied Action Alternatives.

It is interesting and disturbing at the same time, to see the large list of of bird and mammal species observed at the proposal site and to realize that a number of them are "threatened," federal species of concern, or Washington State candidates for listing. Townsend's big-eared bat is both a federal species of concern and a Washington State Candidate for listing, although the incomplete bat studies conducted at the proposal site did not determine bats to species, it is a possibility that this bat may be using the area as well as Keen's Myotis, another Washington State Candidate for listing.

Although it is acknowleged in **Section 3, page 81** that "Some bat fatalities are anticipated as a result of the operation of the proposed project" the only mention of bats in **Section 3, 4.3 Mitigation Measures** is to minimize turbine lighting "thereby reducing the potential for birds and bats to be disoriented by lights....." Bats are not attracted nor disoriented by lights, although they are attracted by some night-flying insects that are. Essentially then, there is no mitigation measure directed toward bat mortalities; should there not be one suggested? If one cannot be suggested then it is assumed that the proposed project's bat mortalities will have to be considered unavoidable.

On the next page, **Section 3, 4.4 Unavoidable Adverse Impacts,** the second paragraph states that bird and bat mortalities will occur, but that "the level of mortality is not anticipated to be sufficient to negatively affect the population viability of any single species." This fallacy of this statement has been discussed before (page 5); the Applicant has presented no credible documentation to support such a claim. As wind farms proliferate in our region, cumulative mortalities become increasingly significant for individual populations, regardless of their population status. In this case, since population status is an unknown, it would not be possible to make a statement about viability.

Section 3, 4.4 Unavoidable Adverse Impacts, Paragraph three "It appears unlikely that the project would cause any mortality to a threatened or endangered species." Northern goshawks, golden and bald eagles were reported to be present at the proposed turbine sites. This project has an operating time estimate of 30 years. Even a non-statistician might consider the" likelihood" of such an event over thirty years to be at least "somewhat likely." Death can occur from a rare visitation, as well as from frequent visitations and although the number of mortalities may be small, the cumulative impacts for certain bird and bat species could affect overall species survival.

Section 3, 5.2.1 Pg 89 Impacts: Proposed Action: Construction There is no mention of re-using the material removed from blasting in order to lessen the need for 100,000 yards of gravel the project is expected to require. Is this a possibility?

Section 3, 5.4 Pg 92 Unavoidable Adverse Impacts The proposal is stated to have "minor unavoidable adverse impacts to energy and natural resources." The crushed rock requirement by

itself (100,000 yards) would deplete local supplies and possibly drive prices higher locally after construction since it might have to be hauled from greater distances.

The preceeding statement is immediately followed by another, claiming that "The overall impact of the project to energy and natural resources would be positive since it would provide the region with low-cost, clean, renewable energy..." etc. This has been commented on previously. The power generated from the proposed facility will not necessarily be used in this region due to the nature of BPA's power brokering activities. Our region's power costs in the past were indeed comparatively inexpensive, but prices are not low now, nor will they be in the future. P.U.D. newsletters have been explaining this fact to customers for several years. There is a growing discussion about making power costs equal across the country, so that those living in "power-poor "areas will not be unfairly penalized. Clean? Not as clean as solar, and certainly this proposal will require radical environmental destruction.

Section 3 14.3 Pg 269 Cumulative Impacts Rhetoric, political pressure, or private interest should never be allowed to override thorough and thoughtful, unhurried evaluation. Scientific rigor is essential to the cumulative impacts analysis. I am very sorry to see this section displaying an alarming number of mis-statements as well as faulty logic. Some of these statements have been carried over from Sections one and two, but there are several statements introduced in Section 3, clearly meant to justify the EIS's approach to the cumulative impacts analysis, that are simply a result of poor logic and misapplication of conclusions or data that has been taken out of context.

One example is a statement that appears on page 274 of Section 3, and is partially quoted below. The NAS Mid-Atlantic Highlands study conducted in 2007, only three years ago is not as relevant (in 2010)for analysis of cumulative impacts to wildlife, especially birds and bats; the rapid pace of wind power development has changed the dynamic entirely not only in the location of the study but especially in the northwest, making this study unsuitable for cumulative impact use in this EIS. This study moreover, quoted in the EIS in **Section 3, Pg 2, 74 Bird and Bat Species** (last sentence in paragraph 2), concluded that "for rare and local populations" the predicted level of fatalities when combined with all other man-made sources of mortality could affect population viability." This statement was made three years ago. Note that the study referred to predictions of mortality, not documented mortalities per se. It has been found that predictions in the arena of wind power mortalities have often been underestimated.

The "other man-made sources of mortality," contrary to the opening statement in paragraph three **(Section 3, Pg 274 Bird and Bat Species)** is hardly an "inherent difficulty" to a cumulative impacts analysis focusing on wind turbine mortalities. The "other man-made mortalities" are merely ancillary; they existed before wind turbine facilities and comprise a background level inherent to our cultural lifestyle. The "cumulative" aspect of the bird and bat analysis attempts to determine what impact wind turbines have regionally, to sometimes unknown population numbers of migrating, foraging and, nesting species.

State protections, USFWS and other specific, reputable wildlife data also must be considered in the analysis, as should a comparison analysis of costs. Although it is difficult to attribute monetary values to wildlife resources, standards are available to do so.

An essential element in any study is the study plan. Basic assumptions must be scientifically (logically) rigorous and the data collection schedules equally well-planned in order to produce

meaningful results. Data collection on wildlife takes many years. Conclusions from the results of such studies must employ scientific rigor. This is where peer-reviewed papers and respected sources can assist reviewers. To ensure adequately broad and equitable cumulative impacts analysis for this proposed project, it would be appropriate to engage another analyst, other than those that have already provided information and conclusions in association with this proposal. There are well-respected scientists available who would be able to perform this service with expertise and lack of bias. I strongly recommend this action, and the inclusion of such a consultation in the final EIS document.

I have made my points along the way, as I followed through the EIS document and will not summarize my concerns. I realize that this may be an inconvenient way to deal with such a large amount of material, but this is page 14 already! The specific shortcomings of the cumulative impacts section are noted throughout this letter but my main concern is for the apparent lack of understanding about what it should be, and to the lack of critical logic used to justify some of the conclusions.

Thank you for the opportunity to comment further and for considering my comments.

Sincerely,

Sallie Tucker Jones

WR - DEIS
Public Comment #513

Michelle, Kayce (UTC)

From: sallie tucker jones [[redacted]@gmail.com]
Sent: Friday, August 27, 2010 3:24 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Draft EIS Comments
Attachments: August 15 comments re Wind farm.docx

Hi Tammy, I hope this works. Thanks for your help, Sallie

August 26, 2010
[redacted] Thuja Narrow
Washougal, Washington 98671-7406

Washington Energy Facility Site Evaluation Council
905 Plum Street
Olympia, Washington 98504-3172

Re: Whistling Ridge Energy Project May 2010 Draft Environmental Impact Statement

Members of the Council:

Thank you for extending the deadline for comments. Although it arrived at the very last minute, it was a generous extension and I hope that you will also extend the time you will take to review what I imagine will be the many additional submissions.

For the following reasons, as well as those that others have taken the time to bring to your attention, I strongly feel that a completely revised document must be created to stand as an accurate and unbiased presentation of information that Council members can use to make an informed decision regarding this proposal.

The existing document shows a lack of professionalism in many important areas that is inappropriate to both the SEPA/NEPA requirements and the process, as well as to the scale and potential impact of the proposal upon the region and its varied resources. Following are a few of the things that I find the most disturbing. Thank you for considering them when the Draft document is revised.

Section 1, 1.1, Pg 1 Para. 2 Interconnection and **Section 1, 2.2 Pg 4 BPA Purpose and Need for Action** I do not believe that BPA has yet responded to the request for interconnection. The nearby BPA transmission lines are at carrying capacity with a backlog of other requests for interconnection. Although the location is referred to in Section3, the precise location for the proposed Whistling Ridge Project interconnection is presently unknown, since no new transmission line has yet been constructed, nor has firm commitment from BPA to existing lines been granted. This renders the cumulative impacts assessment incomplete. It is also incomplete with respect to several other facets of this proposal as well. The BPA new line access corridor construction and interconnection costs, design and placement of any collector substation and interconnection structure, as well as an evaluation of the resulting environmental impacts of their construction and operation would be legitimate, mandatory elements for inclusion in this document.

Since BPA is partially responsible for the DEIS document, it should not be problematic for the agency to include an open and clearly understandable discussion of the agency's present interconnection problems as they relate to the current proposal, thus clarifying this aspect of the EIS. There is discussion of possibilities that were considered but rejected, however, the option finally chosen appears to be questionable, especially since BPA has offered no firm commitment.

Section 1, 2.3.2 Pg 6 ".....it is critical to locate projects in areas where transmission lines currently exist. The applicant thus needs to locate near existing high-voltage transmission , such as the FCRTS." As noted above (in Section 1, 2.2 notes), the currently existing BPA transmission line is running at capacity, with no possibility for the addition of large additional sources, such as this project's proposed output would comprise.

The critical issue regarding wind facilities is indeed appropriate siting, but not for the reason of proximity to transmission lines. The applicant (I assume this is the author) misunderstands the basic premise and need for an environmental impact statement. The lack of transparency regarding this issue is disturbing, and should be clarified in the BPA discussion of the issue, rendering this claim invalid. It should be removed from the document; it appears repeatedly in all Sections.

Section 1, 2.3.3 Pg 6 Business Needs of the Applicant An EIS is not a branch of any chamber of commerce nor is an EIS a forum for advertisement. The history of the applicant/company is already included in the Appendices. Other local background information is included in Section 3, 3.10.2.1 Historic Background and this is where it belongs. Every company has business needs but this is not the arena for such discussion. This heading and its text should be removed.

Section 1, 3.2 Pg 7 "The EIS will be used primarily to inform...." As it stands, I do not feel this document yet contains the essential information needed for informed, responsible decision-making, especially in the areas of wildlife impacts, soils/geology and cumulative impacts analysis. It must be improved significantly before it can serve its intended purpose. This may take more time, but it will certainly ensure that the final EIS is a more suitable document for unbiased decision-making, which at this point it is not.

Section 1, 3.3 and 4 Pgs 8, 9 NEPA Section 102 (2) (c) requires that alternatives to the proposed action be provided. There are **no** Action Alternatives offered in this document (the No Action Alternative is not considered a viable alternative.) Alternatives must be presented and discussed as real possibilities, not avoided by stating that alternatives were "considered but eliminated from detailed study" as is stated in Section 1, 4.3. The Applicant cannot choose to avoid this requirement. Although it is stated several times that the document "... is intended to fulfill the format and content requirements " of a joint SEPA/NEPA EIS, it falls well short in many areas.

Section 1, 4.1 Pg 9 Proposed Action The project site is stated to have a "proven, robust wind resource." There is no material to supply this "proof in the EIS document. If "robust " is interpreted to mean "good", then this statement is doubly inaccurate. The web-based National Renewable Energy Lab regional wind power mapping resource states that the proposal area provides only "marginal to fair" averaged wind resources compared to other sites in the state. The good to excellent areas are farther east. A BPA (among others)-sponsored wind mapping project on the Internet shows the area to have not particularly good wind resources as well.
The wind mapping data, referenced above, conflicts with the applicant's claim that the project site has a "'proven, robust wind resource." No scientifically stringent data is presented that supplies this "proof." This "proven, robust" ("steady") terminology appears repeatedly throughout the document and is misleading. A credible document needs to show at least an attempt at accuracy and objectivity.

There are other reasons as well, discussed on the following pages, that indicate the selected site may be a poor choice for a wind facility. Paramount to these, is the technical geologic study of the project site that has not yet, and must be been performed before suitability evaluations begin.

One of the factors that the Applicant used to identify site suitability was stated to be the "associated lack of native habitat, reducing or eliminating the need to clear additional forest land." Section 3 discusses the initial "need to clear trees to prepare ridge top sites for construction of turbine base pads and of specially configured parts delivery roadways. Information is even provided regarding where the logs will be taken after being cut. The applicant needs to choose one statement or the other and ensure that references to the eliminated statement are removed from the document as well. Which will it be? A credible document displays consistency.

A current aerial photograph of the steep (70% or more) southern side of the project area, in the vicinity of proposed turbine string A1 – A7 shows standing trees that were restricted from being cut by Washington State DNR when the applicant applied for a Forest Practices Application permit in 2003. What were the constraints that prevented this harvest? Will project approval permit the cutting of these trees, in order to clear for turbine pads and access roads, overriding the earlier DNR prohibition? The Council would need to investigate the nature of the DNR constraint before the evaluation process proceeds.

Again, mention of the alleged availability of nearby BPA transmission lines as a site selection factor: transmission lines that do not have the capacity to carry significant additional power. This issue needs to be clarified as discussed under " **Interconnection**" on pages one and two.

Lastly, the site was stated to have been chosen because it is close to an SDS mill site (even though it was stated above that no additional trees would have to be cut for the project) and to SDS business offices! Surely this declaration could be deleted lest it be concluded that convenience has a higher value than environmental factors when choosing a suitable location for a wind power facility. Perhaps if the reasoning behind the statement was elucidated, it might seem an appropriate inclusion.

Section 1, 4.1.2 states that a trench, approximately 8.5 miles long and 5 feet wide would be required to place collector cables. The DEIS mentions reseeding with of grasses and native plants, but does not mention what species, nor whether trees or shrubs that were removed would be replaced in-kind. If the plantings are to minimize noxious weed colonization would the reseeding areas be watered to ensure germination in time to counteract opportunistic germination of undesirable species? If so, the amounts used should appear in the Section 3 water use list and a watering regieme presented.

Will the removed soil be compacted as it is returned to the trench? Will the soil returned to the trench be returned in the same order that it was removed? What will the compaction guidelines entail? Who ensures that it is done properly? Since this extensive trench will likely disturb underground water flow patterns and create new, possibly undesirable flow patterns, it may be important to consider imposing certain requirements and ensuring that agency inspectors with authority to enforce , not proponents or contractors, oversee the work.

Section 1, 4.2 Pg 12 No Action Alternative To state that the No Action Alternative "would not help the state of Washington in achieving the renewable energy goals mandated by the state's Renewable Portfolio Standard" is misleading. Washington State wishes to encourage renewable energy, but not to the exclusion of all else. Site selection is probably the most important way that negative environmental consequences can be avoided, especially with respect to wildlife. Moreover, BPA does not segregate power sources. Once it is produced and fed into the collection system, it is dealt with as any business commodity, in this case by bids. Much of the power we create here is used elsewhere, historically, to California. To imply that a rejection would flout state goals and policies is simplistic and a little misleading.

"(The No Action Alternative) would help to meet the region's need for additional power in the coming years." If by "region", "local" is meant, our regions need is not great. The Columbia River, and other water-driven power-generating dams continue to supply more than ¾ of our power needs. The current trend is to improve efficiency and to encourage both business and the private sector to conservation. It has been estimated (Draft Sixth NPP, 2009) that almost 80% of our locality's future energy demands can be met in this way. Existing and newly approved wind facilities in the region, with a focus in Klikitat County, are more than adequate to make up the difference. It would be not only misleading but inaccurate to state or imply that there is a "need" for additional wind power in this portion of the Northwest.

Section 1, 4.3 Pg 13 Alternatives Considered but Eliminated from Detailed Study The applicant's response is in violation of the guidelines by virtue of not complying with the requirement to supply Alternatives. As mentioned above, an EIS requires that alternatives be provided and considered, with accompanying data and analysis to match all of the other Action Alternatives presented.

Section 1, 4.3.1 Pg 13 Alternative Project Locations The contents of this portion are redundant. Again, it avoids the EIS requirement regarding Alternatives. The points made here have all been stated previously (Section 1, 4.1), in the same bulleted form and with almost the same wording.

Section 1, Table 1 Pg 22 Earth: Construction: Design and Mitigation Measures All of the Design and Mitigation Measures listed are "would be" statements. They "should be" already part of the EIS! If, for instance there was a critical subsurface condition, it needs to be known and factored into the decision process, not "discovered" after approval. Only in this way can accurate and responsible evaluation occur. Because of the difficult terrain, there would appear to be very little possibility for adjustment, should geologic constraints be revealed initially. This could easily endanger the viability of the project, which underscores the importance of having data collected from rigorous studies, and analysis conducted by respected sources. Even with the added benefit of such information, the impacts of such radical alterations to a fragile topography can only be guessed. Stringent geologic study of the proposed site must be performed now and the results reported in another, hopefully improved Draft document. This information will be essential for the Council's evaluation. Without it, the process will have no merit.

Section 1, Table 1 Pg 22 Earth: Construction and Operation – The considerable alterations to the terrain that are proposed for this project - 8.5 miles of three to four foot deep, five foot wide trenches for cable burial, 30-foot deep turbine pads that will require leveling with machinery and extensive blasting to excavate, the building of adequate access and delivery roadways on steep slopes - will certainly have more impacts, and ones that influence each other more closely, than

those listed. The changes made to accommodate the towers will forever alter the ridge tops and they will not revert to their pre-construction profiles after the project is decommissioned. It is inaccurate as well as disingenuous to state that the project construction requirements would be "minor to moderate."

Why is volcanic ash deposition of such concern that it is mentioned here? Granted, several of the soils present do contain a volcanic ash component, but it is not clear to me why this appears, since there is no control over the possible event and, depending on the severity of an ash fall, no mitigation measures would be possible. Large amounts of ash could be physically removed, but would that be mitigation?

Does the statement regarding mass wasting " No obvious recent mass wasting features" imply that there is evidence of the phenomena having occurred on the site in the not-so- recent past? If so, then this is another reason why a more thorough geologic assessment be conducted, **before** the project is evaluated by the Council.

Although the soil type present on part of the project site has low liquefaction potential, massive excavation and refill, as in the 8.5 mile trench , may disturb soil structure enough to render the possibility greater than in the undisturbed state. Although liquefaction of soils are generally associated with earthquake activity, a similar phenomenon may result when soils become over-saturated. As mentioned above, there is no doubt that the proposed excavated and refilled trench will impact and redirect existing subsoil water flows for 8.5 or more miles and may potentially influence an area far greater than the area of the trench. It is also possible that drainage may be improved in the trench after refill, but the possibility that it will not, must be at least considered.

Section 1, Table 1 Pg 22 Water: Construction and **Operation** On-site development will certainly impact ground and surface water drainage patterns as indicated above. It is well- recognized that new roadbeds alter water flow significantly and are responsible for a good deal of continuing erosive runoff. The replacement of natural soil and rock drainage on the site with impervious concrete pads constitute large surface areas that will prohibit slow drainage. Water will be quickly released from these surfaces in large quantities at approximately the same time, limiting the remaining soil's ability to absorb and release it slowly. Some of the remaining soil may be additionally compacted from heavy construction machinery, limiting even more its ability to absorb rainfall and melting snow slowly.

Section 3 downplays the impact these impervious surfaces may have upon soils, but this need to be seriously examined. Each of the 49 tower pads have a diameter of 60 feet, creating 2920 square feet of impervious surfaces at the top of steep ridges. , These conditions produce fast runoff accompanied by high erosion which, over time may lead to catastrophic geologic events, as well as degrade waterways used by fish, amphibians and invertebrates. Amend this inaccurate denial of the project's impacts to ground and surface waters. A discussion, or at the very least a mention of the runoff potential should be presented, as well as possible impacts to the larger streambeds below, with potential to impact fish, amphibians and invertebrates, upon which fish depend for food. Larger game and non-game animals may be impacted as well through water quality degradation and the possible inability to even reach water. The standard BMP guidelines will not be adequate for this anticipated situation. In recognition of this, an individual plan to accommodate the special runoff problems of the project could be developed as part of a mitigation plan, implemented and monitored by an agent other than the applicant/contractors, if

the project is approved. The cumulative impacts discussion should deal with this possibility as well, but does not.

Section 1, Table 1 Pg 24 Biological Resources: Construction Soil compaction is an undesirable and irreversible impact that should be acknowleged since it affects soil drainage, the ability of certain plants to grow well and limits the species of plants that will grow.

In addition to "loss of suitable habitat," abandonment of adjacent suitable habitat due to construction activity should be considered a likely possibility. Some bird, mammal and invertebrate species are known to be more sensitive to intrusive activities, including noise, than others. Several of these species are listed as being present in the project area. Add "abandonment of suitable habitat due to construction activity" to the list on page 24.

Section 1, Table 1 Pg 24 Biological Resources: Operation "There would be some mortality to birds and bats due to turbine collision and displacement, though not in sufficient numbers to affect population viability." I restrain myself when I say that this statement is offensively inaccurate. It also reveals the applicant's misunderstanding of the "cumulative impact" concept. As wind farms proliferate in our region, the cumulative mortalities become increasingly significant for individual populations, regardless of their population status.

Just because there have been no studies addressing bird population declines in association with wind installations does not mean that one has a legitimate claim to deny that such a relationship may exist.

The bat studies cited, employed equipment that was not capable of determining the bat species e present. How then, can an assessment of a particular population be made? Or, by extension, a statement regarding population viability? What authority provided the status information for each population? What is the source of data for western bat species population size? Eastern bat species are being threatened with mass extinctions from White Nose Syndrome, the etiology and causative organism of which is still unknown. The disease has not yet reached the western states; because of this, it is essential that ALL western bat populations be given added protection, regardless of their population status. The bat study data is inadequate in certain respects; the study plan assumptions were not adequately rigorous, there were discrepancies in data collection procedures from year to year, making comparisons and data merging ineffective; long-term sampling frequency was sparse. At the very least, a repeat survey should be conducted which would identify bat species.

The Columbia River Flyway is a major East to West migration route that has likely been used longer than mankind has been here. Raptors are known to use mountain ridges for North/South travel as well as for hunting in this part of the Columbia River. People come from many places outside of this area specifically to see the variety of birds that congregate and fly through this river corridor, some stopping to feed for a few days or weeks before moving on. This site would be an unconscionable choice for a development of this kind, with this knowledge.
"No impacts to listed species" – is this a wish, or a promise from an unknown deity? How can it possibly be known ahead of time that a listed species will not be impacted; especially when inadequate studies have failed to identify what species use the area and with what frequency? And when only a two year start-up mortality study is planned? This is not enough time to obtain meaningful data much less to make any conclusions from the data. The project location would be

an especially difficult one for such monitoring due to the terrain and planned forestry understory management activities. A recent eastern U. S. mortality study is employing dogs to find bat carcasses, because they are so difficult to locate by eye, even in dry flat grassland.

There is no body of information available documenting how wild animals might respond to the sound of wind turbine propellers. This should be at least briefly discussed and dealt with as a possible impact.

Section 1, Table 1 Pg 24 Biological Resources: Design and Mitigation Measures "In order to avoid or minimize impacts to any raptors potentially nesting on or near the project site, a raptor nest survey would be conducted ....." Then what? A survey is not a mitigation measure.

The composition of the proposed Technical Advisory Committee members is not well thought out. Entities or personages that have vested interests or have demonstrated no interest, cannot be relied upon to make responsible, nor to make informed mitigation recommendations. To include the developer on such a committee would be unwise as well as unfair to the resources. If this route is pursued, enforcement capabilities must be granted and there must be a preponderance of resource advocates as committee members. TAC groups are by reputation, generally ineffective when they have no powers. They are also rendered ineffective if members have conflicts in interest, as counties and developers often do. This would be a great opportunity to cast aside TACs, breaking out of the customary mold and devising a new and more effective way to resolve monitoring and mitigation issues associated with such a project.

"For potential impacts to big game species (deer and elk) coordination with WDFW will occur if appropriate." Again, just to mention something does not comprise a mitigation measure. What about bears, and large cats? Who decides if a situation is "appropriate" warranting consultation? Under what circumstances would it be appropriate to coordinate? The project location is a designated wintering area for elk. What plant species are present that elk might use for winter forage? Will these species be replanted and therefore present in adequate quantities to continue to serve as winter forage during construction and operation of the proposed project? These considerations must be treated responsibly somewhere in the document. The quoted statement is vague and obtuse. It leaves the reader with **no information** about how big game species ' use of the area will be approached, nor does it correct nor solve any problems big game species may have because of the project.

Section 1, Table 1 Pg 25 Energy and Natural Resources: Operation The "Minor quantities of lubricating oils....." should be specifically quantified, if only as an estimate, to be consistent with the remaining listed items.

Section 1, Table 1 Pg 25 Environmental health: Construction The project is located at the southern end of a wide contiguous band of lands termed "Fire-prone Landscape Management Strategy Area" by a USFWS 2008 Final Spotted Owl Recovery Plan map. This area runs from the Columbia River north to the Washington-Canada border. The increased risk of fire during the summer months must be seriously considered and aggressive prevention measures **above the usual standards** should be pursued and stipulated.

Prohibitions on conducting potential spark and fire-generating activities during the driest fire danger periods of the year could be part of a plan keyed to this project and would demonstrate

care and concern for nearby communities. A several month delay in certain construction activities and equipment use as a result of time-of-year prohibitions would be well justified and need not halt all building progress.

There WILL be blasting activity in association with this project, if approved. Getting rid of the "may" and "could" in the bullet dealing with blasting would be a more honest way of stating the realities of the massive environmental reshaping that this project will engender. If "Blasting could also create a fire hazard during dry weather", then this activity should be curtailed during these periods. Likewise, an activities plan related to the regional weather patterns might suggest avoiding blasting during unusually wet times of the year to avoid problems similar to those encountered recently along Hwy 14. There is no doubt that the level of blasting activity alone has the potential to seriously destabilize this particular environment, which, as noted elsewhere, already has nearby unstable loci. Since there is no geologic assessment data provided, it is impossible to even guess what impacts such activity could produce. When the geologic assessment is conducted, it should address not only immediate impacts but the potential long-term impacts of blasting, even although this would only be predictive. Road department records from Underwood and Hwy 14 should give the Council a good idea of the areas' historic instability.

Section 1, Table 1 Pg 25 Environmental health: Construction (Column 4} The second, bulleted statement in column 4 implies that a fossil-fuel- powered facility might supply fill-in power when a wind facility is unproductive (and that it would carry a higher risk of fire.) There is a federal requirement mandating that alternative power source facilities must accompany any new wind facility, based upon the amount of power generated. The proposed wind project would generate above the MW threshold, requiring the construction of an alternative power-generating facility to balance a wind farm's unproductive periods of no wind or too high wind. The construction cost of this requirement building, inter-tie costs, should certainly be included in the cost analysis for this project, but it does not appear. Since the alternative power facility is a requirement , its location should be identified and the associated environmental impacts need to be included in the EIS, including the cumulative impacts portion.

Section 1, Table 1 Pg 26 Environmental Health: Operation Again, with respect to fire potential, local ordinances and other regulations and standards are not directed to such a project, and are not adequate, because of the unusual situation. An individually tailored, aggressive fire prevention plan and response tactic needs to be developed for the construction and operation phases of this proposed project. Relying on existing regulations will not adequately address the specific potential hazards nor protect the nearby population and environment.

"...none of the planned turbines are within 2,500 feet of existing residences." This is not correct; there is one residence. Mitigation measures should be included in the proper column.

"EMF from the project ...would have no health and safety impacts." I do not see any information in the document to support this assertion. There is certainly study regarding the issue, but conclusions are not definitive at this time. Can a pronouncement be made if there is inadequate documentation? Unless this can be produced, this statement needs to be removed or qualified in some manner in order to be objective.

Section 1, Table 1 Pg 27 Noise: Construction This section downplays construction noise, which will carry well into the valleys and bounce off of adjacent hillsides. Although construction is stated to occur during daylight hours, it will likely begin very early and continue through dusk.

The added noise of myriad transportation trucks will certainly impact local residents on a daily basis and should be included in the list.

The noise from blasting will certainly be noticeable and will last for awhile. In thoroughness, it should also be mentioned.

Section 1, Table 1 Pg 27 Noise: Operation An in-depth submission regarding wind turbine noise impacts upon humans has been submitted. Please consider it as a counter to the data presented in the EIS and take appropriate action to modify the table.

Section 1, Table 1 Pg 33 Socioeconomics: Operation There are several studies that identify undesirable affects of turbines upon humans (see K. Brown's testimony citations). One would not unreasonably conclude that properties in close proximity to such turbine arrays might be less desirable for habitation, at least to a percentage of the population. Proponents of wind power have issued statements derived from studies indicating that property values are not adversely affected by nearby wind turbines. As such studies continue, depending on the analyses, certainly there is the possibility that property values may be affected one way or another, but for now either position can support and document its claims.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts : Earth The enormously disruptive activity that will be required to complete this project, located in a geologically fragile environment that has already been subjected to considerable alteration, is very likely to respond with undesirable events. In potentially susceptible areas, no amount of "careful design" can prevent, nor can "mitigation measures" restore, areas where mass wasting has occurred. It should be added to the list of potential adverse impacts, especially since evidence of such an event was documented during a previous survey. The severe re-contouring, blasting, large-scale trenching and creation of impervious surfaces all increase the likelihood of minor or major responses from the environment. The soil types in some areas are acknowledged to be susceptible to erosion and the proposed "A" array is located precisely along a Class II (High Landslide Hazard Area) ridgeline. To dismiss these and other known geologic concerns with the two brief dismissive statements presented is unacceptable. Until a reputable geologic assessment study is performed, there will remain a glaring gap in this arena. Without professional scientific data, any predictive statements can only be considered arbitrary and of dubious merit.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts: Air Quality Construction activity would involve many more pieces of diesel-fueled machinery than any logging operation. It is absurd to think that the residents of the town of Underwood will not notice, nor be affected by, a continuing stream of diesel trucks heading up and down the roads every day for months. Peak morning hour numbers of trucks are estimated to be 210/hr for 3-5 months. Further, all major construction equipment is to be diesel-powered (Section3 Table 6-5, Pg 109 Fire and Explosion Risk Mitigation.) It is disingenuous to claim that this would be comparable to "existing logging operations.", and equally so to state that "the project would contribute to a beneficial impact on overall air quality" Climatological data presented in the EIS indicates that the area is prone to air stagnation at all times of the year, but especially during the summer when pollutants from downriver may collect forming considerable haze. Even if this statement refers to the completed project, it is a bit of a stretch to claim "beneficial impacts on overall air quality" when the requirement to build alternative fuel power plants are a direct result of building wind powered

facilities. With this in mind, it might be fairer to consider that project would lead to a decline in overall air quality.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts: Biological Resources See previous comments regarding bats and birds (Section 1, Table 1 Biological Resources: Operation.) The Summary statement simply reiterates the document text statements, almost word for word, imparting the same inappropriate lack of concern. Why are no other wildlife groups mentioned? Certainly animal corridors will be interrupted, the areas in which young are raised may be pushed further away and populations may become fragmented. Even with the proposed mitigation measures in place, erosion runoff would affect the fishery and invertebrate communities downhill of this project. Blasting may obliterate pika or marmot populations that may have been overlooked. No mention of them occurs in the animal surveys. These could be significant impacts unless there is some oversight to ensure that mitigation measures are maintained to the standard for the duration of construction. Often, self-policing measures produce initial compliance, but over time may be seen to deteriorate.

Section 1, 8.2 Para 1 Pg 37 The last sentence in this paragraph appears to more of a running prepositional phrase. It is awkward and could be recast for a more professional presentation.

Section 1, 8.2 Para 2 Pg 37 The first sentence of the second paragraph is incomplete and needs structural as well as subjective clarification.

The last sentence of this paragraph still stretches my imagination – how will "introducing up to 75 MW" of wind power "contribute to efforts to improve air quality in the Columbia River Gorge vicinity?" If anything, fossil-fuel facilities will be **added** (producing a negative effect upon air quality) to make up for the irregular output of this wind facility.

Section 1, 10 Pg 38 References Again, BPA's Wind Integration Plan might be an excellent addition to the references section if it might clarify the line access and interconnection issues.

Section 2, 1.4.1 Pg 9 Construction Activities "Transportation of construction materials" (gravel, concrete, rebar, etc.) could be added to the list but "Use of dynamite and machine re-contouring of ridges" should be added to the list.

Section 2, 1.4.2 Pg 12 Construction Schedule Earlier portions of the document state a construction time of one year. This section states "approximately 15 months" would be required for construction ; all other sections repeatedly mention one year. Consistency throughout the document would enhance credibility. Are the construction cost estimates based upon 12 or "approximately 15 months?" The suggested time-of-year prohibitions to pro-actively address fire danger could be inserted into the detailed construction schedule, possibly changing the time frame even beyond 15 months.

Section 2, 1.4.4 Pg 13 Construction Costs An extra three months or more added to the construction time estimate of one year stated early in the EIS will add to the construction cost estimate presented in Section 2, 1.4.4 Pg 13, assuming that it is based upon a 12-month time frame.

Another cost that has not been discussed, although it may not be considered a bona fide construction cost, is that of the required alternative/fossil fuel facility that would make up for non-production times at the wind facility. Interconnection, substation and line link costs associated with this facility should be also be added and later considered in cumulative impact analyses. The total cost of building an alternative power supply facility to offset erratic wind generation is possibly not the responsibility of the applicant, but possibly some monetary responsibility exists? Who pays for the construction of such a facility? Is the cost partially subsidized? If so, by whom?

Section 2, 1.5 Pg. 14 Project Operations The project is stated to "operate 24 hours per day, seven days per week," implying that generation also occurs on that schedule. It might be a bit more objective to modify the statement to reflect the reality of wind power generation for those who do not know.

Is there any capability
The first U. S. study of reduced (bat) fatalities and economic costs of "low-wind mitigation" began in 2008,continued in 2009 and 2010. The research is being conducted in Pennsylvania with Casselman turbines and has demonstrated that bat fatalities were reduced an average 73% when turbines were left off-line, at night, during low wind conditions (<11.2 – 14.5 mph). An additional benefit to bats was to use the nighttime limitation during the migration season in the fall. The second year of the study, 2009, was funded wholly by USFWS. I will provide the Council with the citations. The calculated loss of production resulting from the temporary stoppage in that area of the country was 0.3 to 1.0% of the facilities' yearly output.

Some studies have indicated that certain individual towers in an array produce more mortalities than others. Will this project have the capability of shutting down a single turbine? Will it be possible to shut down individual arrays in this project? Will the strategy above be a possibility for these turbines or is their operation wholly automatic? What would the cost difference be if this capability was part of the design plan for these proposed turbines? This approach might be one that could be applied to bird mortality as well.

Section 2, 3 Pg 19 Alternatives Considered but Eliminated from Detailed Study As in Section 1, the applicant has substituted a list of self-generated criteria instead of fulfilling the mandated subject matter identified in the heading.

Section 3, 44.1.5 Special Status Wildlife Species Northern Spotted Owl Although the two historical northern spotted owl nesting sites at Moss and Mill Creeks, near the northern boundary of the proposed project are not believed to be presently occupied, these areas still carry the potential for occupation and use. Little is known about long-term northern spotted owl reoccupation patterns and current agency attempts to halt population declines are not encouraging. Forested habitats that have supported northern spotted owls in the past are likely to support a diverse suite of life forms and hold the potential to support one another, given enough space.

The proposed project is located within one of Washington States ten designated SOSEAs (Spotted Owl Special Emphasis Areas.) Although the project location and proposed construction activities do not impinge upon the parameters specified in the state regulations regarding SOSEAs, a favorable decision for this proposal would lead to extensive re-contouring and dynamiting the

outer boundary of a select habitat resource. Regardless of the legality of the proposed actions, to actually go ahead with the proposed habitat alterations would seem to flout the intent of the regulation. Eliminating the northern portion of the B array and the entire C5 to C8 array might allow the outer edges of the historic nest range that overlap the project boundary some protection as well as respect the spirit of the SOSEA. This might even serve as one of the as-yet-unsupplied Action Alternatives.

It is interesting and disturbing at the same time, to see the large list of of bird and mammal species observed at the proposal site and to realize that a number of them are "threatened," federal species of concern, or Washington State candidates for listing. Townsend's big-eared bat is both a federal species of concern and a Washington State Candidate for listing, although the incomplete bat studies conducted at the proposal site did not determine bats to species, it is a possibility that this bat may be using the area as well as Keen's Myotis, another Washington State Candidate for listing.

Although it is acknowleged in **Section 3, page 81** that "Some bat fatalities are anticipated as a result of the operation of the proposed project" the only mention of bats in **Section 3, 4.3 Mitigation Measures** is to minimize turbine lighting "thereby reducing the potential for birds and bats to be disoriented by lights....." Bats are not attracted nor disoriented by lights, although they are attracted by some night-flying insects that are. Essentially then, there is no mitigation measure directed toward bat mortalities; should there not be one suggested? If one cannot be suggested then it is assumed that the proposed project's bat mortalities will have to be considered unavoidable.

On the next page, **Section 3, 4.4 Unavoidable Adverse Impacts**, the second paragraph states that bird and bat mortalities will occur, but that "the level of mortality is not anticipated to be sufficient to negatively affect the population viability of any single species." This fallacy of this statement has been discussed before (page 5); the Applicant has presented no credible documentation to support such a claim. As wind farms proliferate in our region, cumulative mortalities become increasingly significant for individual populations, regardless of their population status. In this case, since population status is an unknown, it would not be possible to make a statement about viability.

Section 3, 4.4 Unavoidable Adverse Impacts, Paragraph three "It appears unlikely that the project would cause any mortality to a threatened or endangered species." Northern goshawks, golden and bald eagles were reported to be present at the proposed turbine sites. This project has an operating time estimate of 30 years. Even a non-statistician might consider the" likelihood" of such an event over thirty years to be at least "somewhat likely." Death can occur from a rare visitation, as well as from frequent visitations and although the number of mortalities may be small, the cumulative impacts for certain bird and bat species could affect overall species survival.

Section 3, 5.2.1 Pg 89 Impacts: Proposed Action: Construction There is no mention of re-using the material removed from blasting in order to lessen the need for 100,000 yards of gravel the project is expected to require. Is this a possibility?

Section 3, 5.4 Pg 92 Unavoidable Adverse Impacts The proposal is stated to have "minor unavoidable adverse impacts to energy and natural resources." The crushed rock requirement by

itself (100,000 yards) would deplete local supplies and possibly drive prices higher locally after construction since it might have to be hauled from greater distances.

The preceeding statement is immediately followed by another, claiming that "The overall impact of the project to energy and natural resources would be positive since it would provide the region with low-cost, clean, renewable energy..." etc. This has been commented on previously. The power generated from the proposed facility will not necessarily be used in this region due to the nature of BPA's power brokering activities. Our region's power costs in the past were indeed comparatively inexpensive, but prices are not low now, nor will they be in the future. P.U.D. newsletters have been explaining this fact to customers for several years. There is a growing discussion about making power costs equal across the country, so that those living in "power-poor "areas will not be unfairly penalized. Clean? Not as clean as solar, and certainly this proposal will require radical environmental destruction.

Section 3 14.3 Pg 269 Cumulative Impacts Rhetoric, political pressure, or private interest should never be allowed to override thorough and thoughtful, unhurried evaluation. Scientific rigor is essential to the cumulative impacts analysis. I am very sorry to see this section displaying an alarming number of mis-statements as well as faulty logic. Some of these statements have been carried over from Sections one and two, but there are several statements introduced in Section 3, clearly meant to justify the EIS's approach to the cumulative impacts analysis, that are simply a result of poor logic and misapplication of conclusions or data that has been taken out of context.

One example is a statement that appears on page 274 of Section 3, and is partially quoted below. The NAS Mid-Atlantic Highlands study conducted in 2007, only three years ago is not as relevant (in 2010)for analysis of cumulative impacts to wildlife, especially birds and bats; the rapid pace of wind power development has changed the dynamic entirely not only in the location of the study but especially in the northwest, making this study unsuitable for cumulative impact use in this EIS. This study moreover, quoted in the EIS in **Section 3, Pg 2, 74 Bird and Bat Species** (last sentence in paragraph 2), concluded that "for rare and local populations" the predicted level of fatalities when combined with all other man-made sources of mortality could affect population viability." This statement was made three years ago. Note that the study referred to predictions of mortality, not documented mortalities per se. It has been found that predictions in the arena of wind power mortalities have often been underestimated.

The "other man-made sources of mortality," contrary to the opening statement in paragraph three **(Section 3, Pg 274 Bird and Bat Species)** is hardly an "inherent difficulty" to a cumulative impacts analysis focusing on wind turbine mortalities. The "other man-made mortalities" are merely ancillary; they existed before wind turbine facilities and comprise a background level inherent to our cultural lifestyle. The "cumulative" aspect of the bird and bat analysis attempts to determine what impact wind turbines have regionally, to sometimes unknown population numbers of migrating, foraging and, nesting species.

State protections, USFWS and other specific, reputable wildlife data also must be considered in the analysis, as should a comparison analysis of costs. Although it is difficult to attribute monetary values to wildlife resources, standards are available to do so.

An essential element in any study is the study plan. Basic assumptions must be scientifically (logically) rigorous and the data collection schedules equally well-planned in order to produce

meaningful results. Data collection on wildlife takes many years. Conclusions from the results of such studies must employ scientific rigor. This is where peer-reviewed papers and respected sources can assist reviewers. To ensure adequately broad and equitable cumulative impacts analysis for this proposed project, it would be appropriate to engage another analyst, other than those that have already provided information and conclusions in association with this proposal. There are well-respected scientists available who would be able to perform this service with expertise and lack of bias. I strongly recommend this action, and the inclusion of such a consultation in the final EIS document.

I have made my points along the way, as I followed through the EIS document and will not summarize my concerns. I realize that this may be an inconvenient way to deal with such a large amount of material, but this is page 14 already! The specific shortcomings of the cumulative impacts section are noted throughout this letter but my main concern is for the apparent lack of understanding about what it should be, and to the lack of critical logic used to justify some of the conclusions.

Thank you for the opportunity to comment further and for considering my comments.

Sincerely,

Sallie Tucker Jones

Michelle, Kayce (UTC)

From: Talburt, Tammy (UTC)
Sent: Friday, August 27, 2010 3:47 PM
To: EFSEC (UTC)
Subject: FW: Comments on Whistling Ridge DEIS

Kayce here is another comment.

Tammy

From: Montano,Andrew M - KEC-4 [mailto:ammontano@bpa.gov]
Sent: Friday, August 27, 2010 3:41 PM
To: 'Glen Holmberg'
Cc: Posner, Stephen (COM); Talburt, Tammy (UTC)
Subject: RE: Comments on Whistling Ridge DEIS

Your comment has been received. Thank you for your interest in the Whistling Ridge Energy Project.

Updates can be found at www.bpa.gov/go/whistling. I'm CCing the Washington Energy Facility Siting and Evaluation Council as well.

Andrew M. Montaño
Bonneville Power Administration | Environmental Protection Specialist
[redacted]@bpa.gov | P: 503. 230.[redacted] | F: 503. 230. [redacted]
Pleasure in the job puts perfection in the work. -Aristotle

From: Glen Holmberg [mailto:[redacted]@yahoo.com]
Sent: Friday, August 27, 2010 3:36 PM
To: Montano,Andrew M - KEC-4
Subject: Comments on Whistling Ridge DEIS

To: **The Bonneville Power Administration (BPA) and the State of Washington Energy Facility Site Evaluation Council (EFSEC)**
Re: **The Whistling Ridge Energy Project's Draft Environmental Impact Statement (DEIS)**

I am writing to say the conclusions reached by the authors of the DEIS are wrong. It needs to be redone to reflect reality. I oppose the location of this project and think it's a bad idea for the vast majority of people who live in the area.
The DEIS wrongly concludes that visual impacts will be low to moderate. Page 3-171 describes the north facing view from Hood River Hospital, an urban setting in the middle of town, but fails to describe the impact to any of the viewpoints along the waterfront, residences in town

and recreation areas scattered throughout Hood River and The Gorge. These viewpoints are cherished and attract tourists and residents alike to the area. Industrial wind turbines 400' high will have a high impact on the scenic quality of these view sites, not a low impact.

The DEIS also fails to mention the impact on property values in the area. I own a home in Underwood. I would not consider buying there again if large wind turbines are near by. To conclude that wind turbines will promote eco-tourism is wishful thinking at best.
I request that you reject this DEIS and not allow the project to continue in its current form. The impact it will have on tourism and residents will far outweigh any benefits. A handful of jobs created in Skamania County will not offset the long-term losses to economic growth in The Gorge. We already get 49% of our power from renewable energy. There are much better places to put wind turbines than the edge of a national scenic area.
Glen Holmberg
Underwood WA 98651

Michelle, Kayce (UTC)

From: Kent and Barbara Bleakley [redacted]@gorge.net]
Sent: Friday, August 27, 2010 3:48 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Energy Project
Attachments: Whistling Ridge Comments.doc

Attached are comments on the proposed project for your review.

Thanks,
Barbara Bleakley

BEFORE THE STATE OF WASHINGTON ENERGY FACILITY SITE EVALUATION COUNCIL (WEFSEC)

In the Matter of Application

No. 2009-1

Whistling Ridge Energy LLC

Whistling Ridge Energy Project

Comments by Barbara Bleakley, a private citizen

My husband and I live in White Salmon, WA. We, like thousands of other families, have purchased homes in this area because of the "protected" beauty of the National Scenic Area (NSA). It should continue to be protected as a priceless asset to the NW and our country. It is time for our government to stop supporting any project that is politically expedient at the expense of the citizens. We are hopeful that reason will prevail and that the powers that be perform a careful and thorough analysis of every single possible negative impact to our local communities and environment by this project.

We have grave concerns over locating the Whistling Ridge wind farm on the proposed ridge immediately outside the NSA, including but not limited to the points made below. We can easily conclude that there are better locations in unpopulated or otherwise unproductive areas, and that other more appropriate green technologies should be considered a higher priority.

1. **Precedent.** We feel that if Whistling Ridge is allowed to move forward, the Governor of WA would be setting a dangerous precedent here in the Columbia River Gorge. What will stop other wind farms from being allowed just outside the geographical boundaries but visually impacting the NSA? We have already sacrificed the natural beauty of the Columbia Hills east of the NSA to hundreds and perhaps even thousands of wind turbines on both sides of the Columbia in the interest of this green energy that must be subsidized to make ANY economic sense. How far should we go with this philosophy of creating green energy. At what cost? As common sense tells us, if it sounds too good to be true, it probably is, as evidenced by the ethanol political boondoggle. Allowing this project is outrageous considering all the blood, sweat and tears expended over the creation and management of the nation's ONLY National Scenic Area. Hundreds of millions of dollars of residential view property will immediately be impacted and devalued. Our scenic resources should NOT be held for ransom under the guise of "green energy" without definitive studies of the many significantly adverse impacts to people, wildlife, transportation, management of our electrical grid and its capacity, and our nation's and state's limited monetary resources. How could anyone have ever anticipated that when the NSA act was created by Congress that the most politically powerful family in the Gorge would many years later propose siting a huge industrial wind farm over 400 feet above a ridge immediately outside the boundary lines of the NSA and in plain view of their own White Salmon, Hood River, and Skamania County neighbors?

2. **Inadequate Electrical Grid**. An article published in the Oregonian Newspaper dated July 17, 2010 written by Ted Sickenger titled, "Too Much of a Good Thing: Growth in wind power makes life difficult for grid managers"

(http://www.oregonlive.com/business/index.ssf/2010/07/too_much_of_a_good_thing_growt.html) provides a great summary of the enormous limitations of the current grid system for handling the CURRENT number of wind turbines. It is a very complicated issue that needs to be rectified BEFORE we decide which green energy makes the most sense to invest government dollars in. Why are we spending huge amounts of subsidy money to build what will most likely be an obsolete technology by the time the electrical grid can handle the capacity of these giant wind turbines so they do not have to sit idle when the wind is blowing! There are promising new wind energy technologies under development right now that will very soon be economically viable without subsidies and have less visual and environmental impact. (See http://www.makanipower.com/ for example.)

3. **"Facts".** The promoters of this project have concentrated their money and power on a sales job based on selective misinformation in an attempt to promote the economic and political benefits (which have been grossly exaggerated) to Skamania and Klickitat Counties and WA State. Photos and "facts" have been specifically chosen or rejected to distort the realities as well as to quote old studies that are no longer appropriate. For example, there is a blatant omission (and highly selective inclusions) in the Draft EIS document of any photos of potential visual impacts from the Strawberry Mountain area in White Salmon. How about from the Mark O. Hatfield State Park scenic hike/bike trail along the Columbia River between Hood River and Mosier?

4. **Transportation Studies**. Now that the Oregon Court of Appeals recently upheld the Gorge Commission's right to approve the Broughton Mill development project, new transportation studies should be incorporated in the EIS to address the impact of these two Stevenson family projects, perhaps concurrent, on transportation.

5. **Wildlife Concerns**. There are wildlife concerns that need further study and have been addressed by other opponents to this project. I'm not a biologist, but the impacts on just bat populations by wind turbines has been sited by the USGS in this article: http://www.fort.usgs.gov/batswindmills/. " Dead bats are turning up beneath wind turbines all over the world. Bat fatalities have now been documented at nearly every wind facility in North America where adequate surveys for bats have been conducted, and several of these sites are estimated to cause the deaths of thousands of bats per year. This unanticipated and unprecedented problem for bats has moved to the forefront of conservation and management efforts directed toward this poorly understood group of mammals." These affects on bats and the other 300 species of birds in the Gorge, migratory birds, and other wildlife should be studied further before blindly accepting the notion that wind turbines are "green". Obviously this point isn't limited to just the Whistling Ridge project, but is relevant to all current technology wind farms including this one.

6. **Light pollution**. Visualize a peaceful summer evening enjoying the sunset view of the Gorge from Strawberry Mountain in White Salmon where we live (and from many other areas in the Gorge), and seeing 50 blinking red lights all going off at once as the sun goes down behind them! One of the big draws to rural areas is the beauty of the night sky devoid of city lights.

We hope you will conclude as we have that this is the absolute wrong location for this project, and probably the wrong technology for this time. Please let's use some good old NW common sense that we are known for. Rely on facts and not just somebody's sales pitch, political pressure, and the enticement

of big "free" subsidies, going into private pockets paid for by all US citizens. Please recommend the denial of this project in its proposed location to Governor Gregoire. It is the right decision.

Michelle, Kayce (UTC)

From: Joy Gohl [[redacted]@AdventureCruises.com]
Sent: Friday, August 27, 2010 4:36 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am also concerned about turbine noise pollution. The DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Joy Gohl
[redacted] Snowden Rd
White Salmon, WA 98672

Michelle, Kayce (UTC)

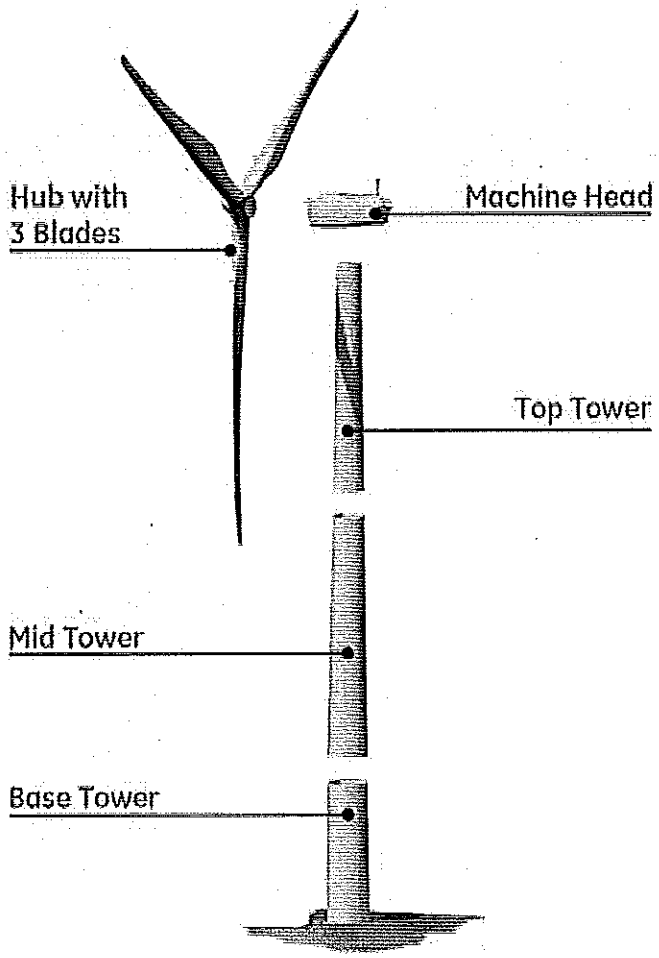
From: repar [redacted]@saw.net]
Sent: Friday, August 27, 2010 4:44 PM
To: EFSEC (UTC)
Subject: Addendum to Whistling Ridge comments (e-mail 4) on transport
Attachments: DEIS_turbine_specifications_27Aug2010.pdf

Importance: High

Dear EFSEC,
Attached, please find a pdf file, DEIS_turbine_specifications_27Aug2010.pdf, that I wish to be attached to my previous e-mail on transportation. It was #4 in the subject line. I'm sorry that some of the pictures are cut off—my technical expertise has failed me late in the day! Thank you very much.

Mary J. Repar
[redacted]E. Loop Rd. [redacted]
Stevenson, WA 98648
Tel: 509.427.[redacted]
E-mail: [redacted]@saw.net
"Life is not measured by the number of breaths we take but by the moments that take our breath away."

Mesalands Community College
Wind Turbine Specifications



Dimensions & Weights

Hub height – 80 meters or 253.6 feet

Tower Components

Component	Weight(lbs)	Length(Ft.)	Diameter(Ft.)
Base Section	126,766	73.2	15 to 14.1
Middle Section	83,445	82	14.1 to 11.2
Top Section	65,936	98.4	11.1 to 8.4

Other Components

Component	Weight (lbs)	Length(Ft.)	Diameter (Ft.)
Hub	37,479	N/A	10.5
Blade	13,889	121.4	6.4

Rotor (assembly)	79,146	N/A	252.6
Nacelle	121,916	28.9	12.5x12.5

Foundation

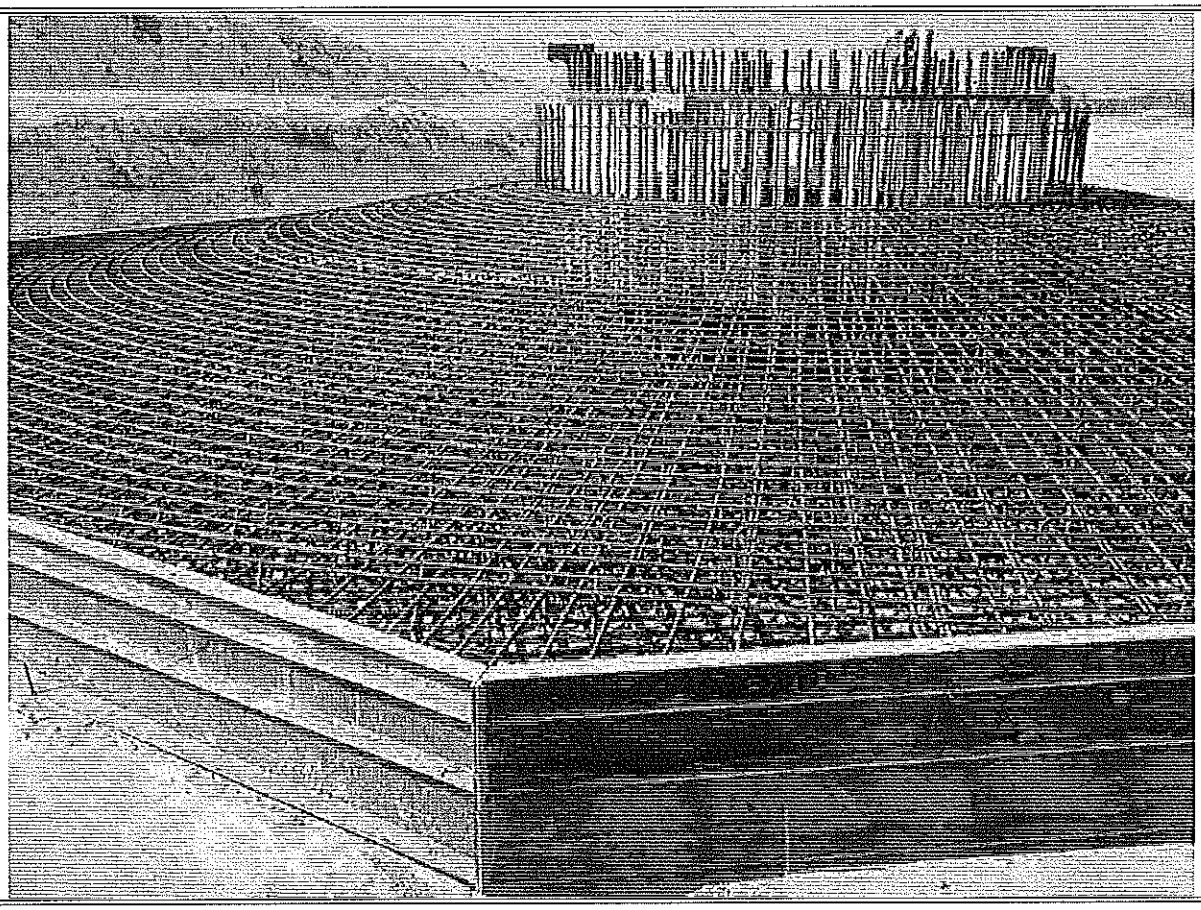
Foundation is 45 feet across by 9 feet thick and is installed below the existing ground plane:

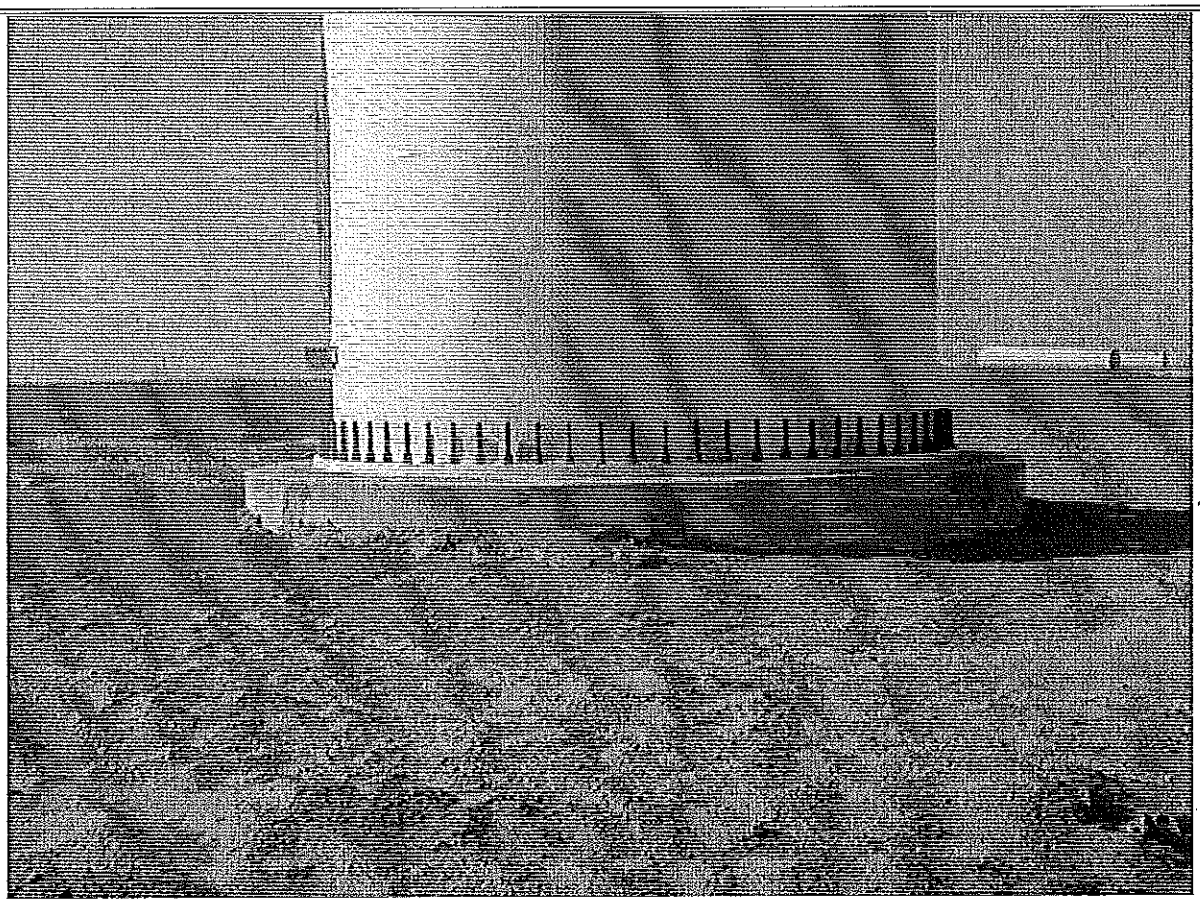
12,150 cubic fee

450 cubic yards

742 Tons of concrete (using 3,300 lb/yd^3)

45 trucks of concrete



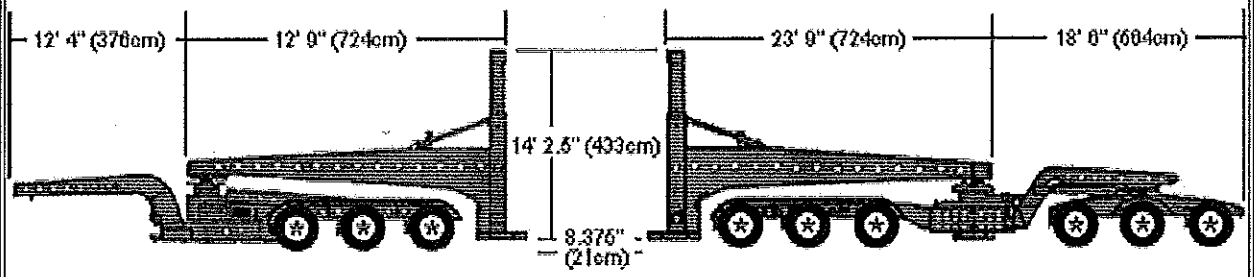


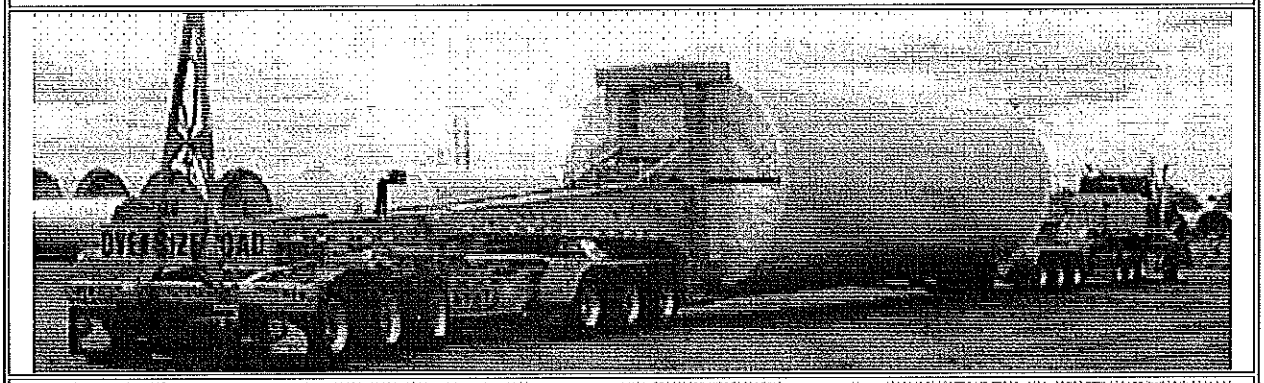
Tower Section Transportation

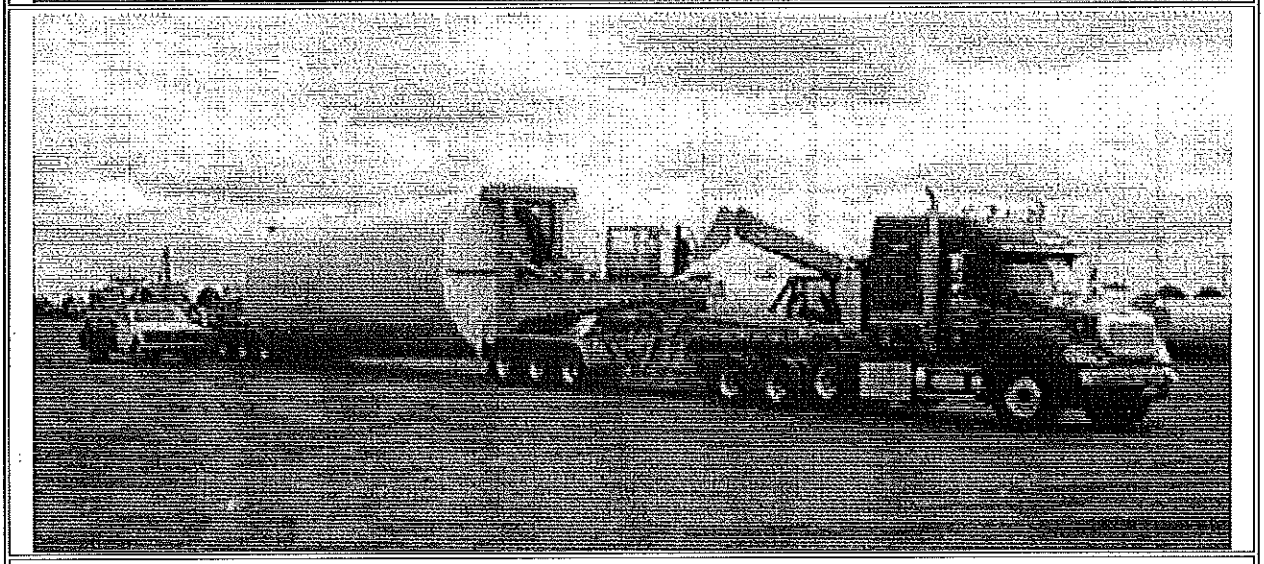
Wind Turbine arrived October 14th , 2008.

There was 7 trucks hauling the turbine but only some were just normal trucks. For tower segments, transportation used Schnable type trailers, the tower section is connected to the Schnable attachments of the trailers. The tower section thus forms an integral part of the trailer arrangement and is not supported on any kind of chassis

6 AND 9 AXLE SCHNABLE WITH STEERABLE DOLLY

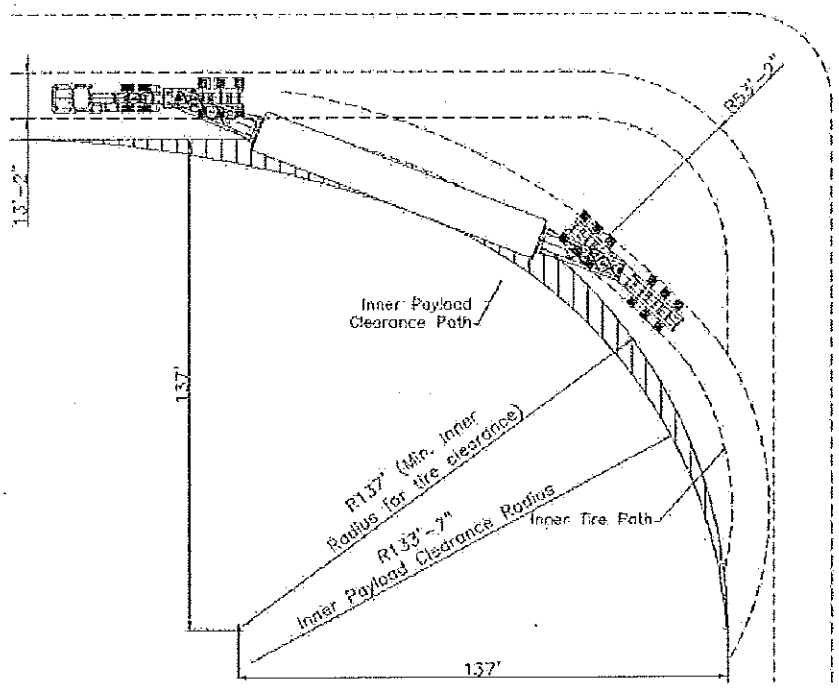




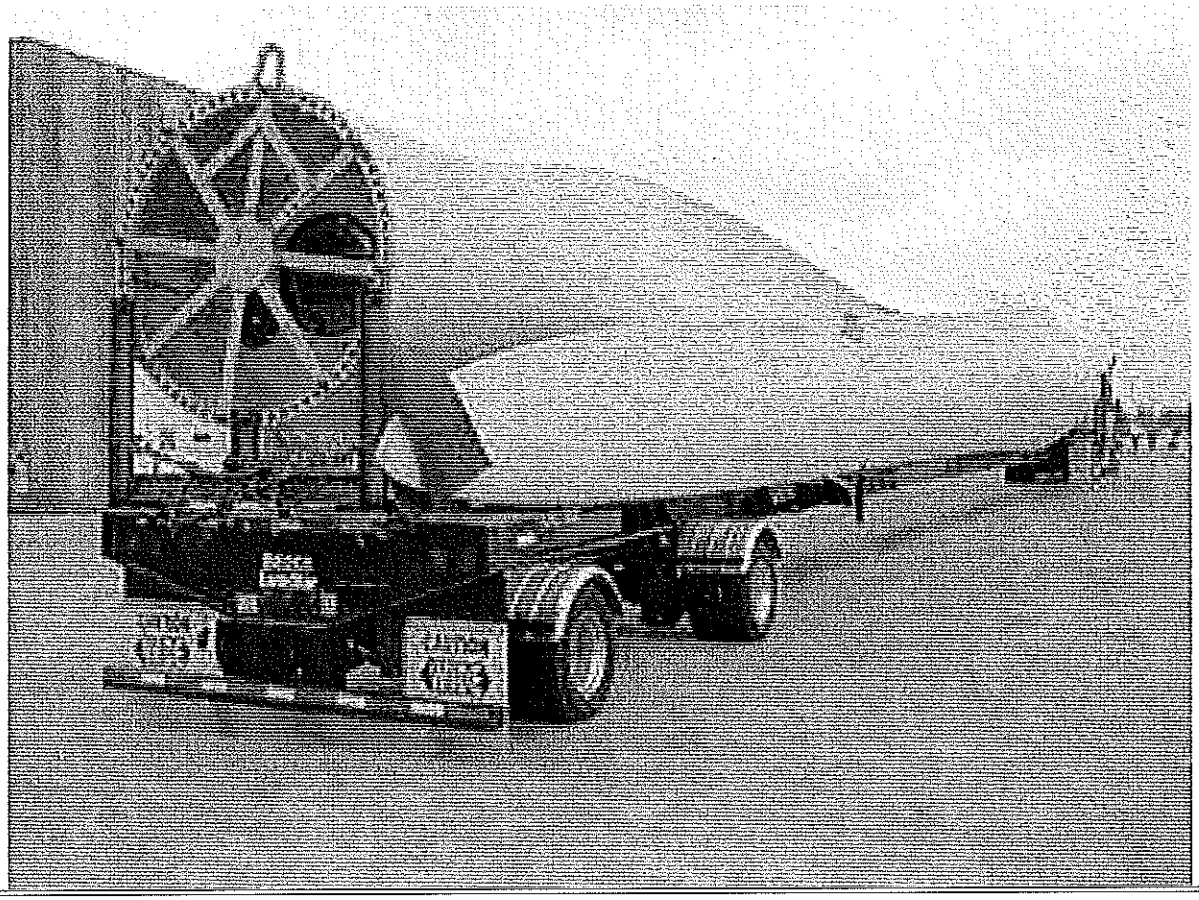


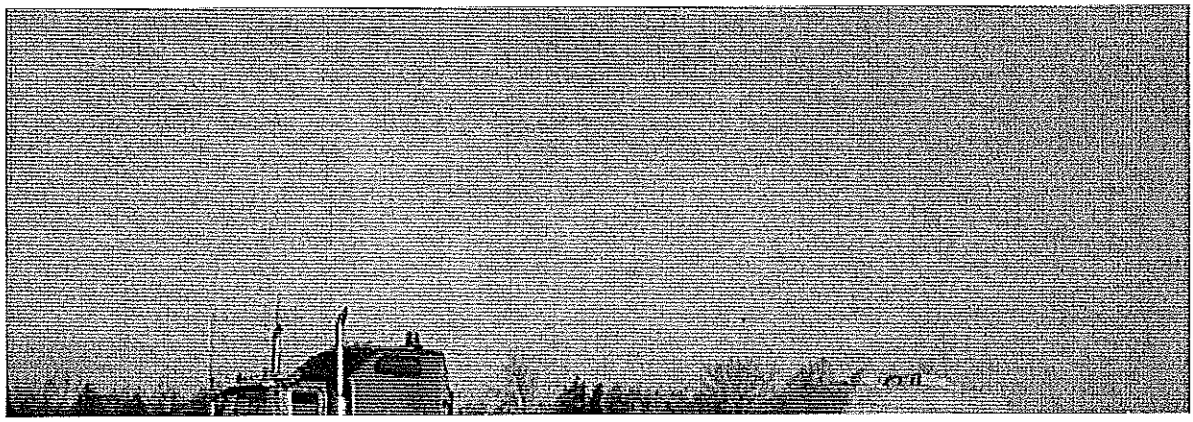
A Schnable trailer with the base tower loaded is the least maneuverable transport arrangement

that will negotiate the site roads. Although Schnable trailers are the most prevalent mode of transportation for tower section, it cannot be guaranteed that these trailers will be used on a specific project.



Other turbine components are shipped using special designed trailers.





Traffic Volume

Traffic:

45 - concrete trucks

7 - trucks hauling wind turbine

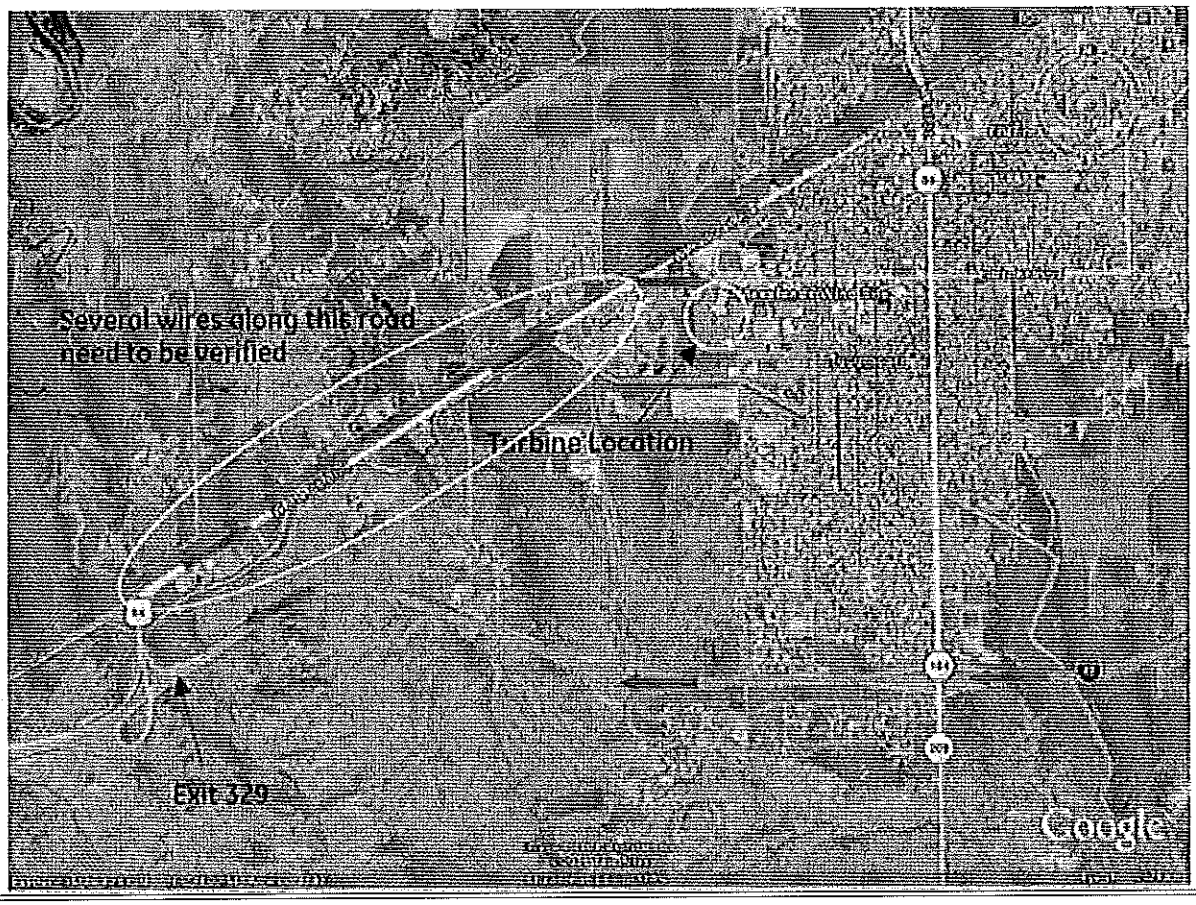
6 - trucks hauling 2 cranes (largest is 400 ton crane)

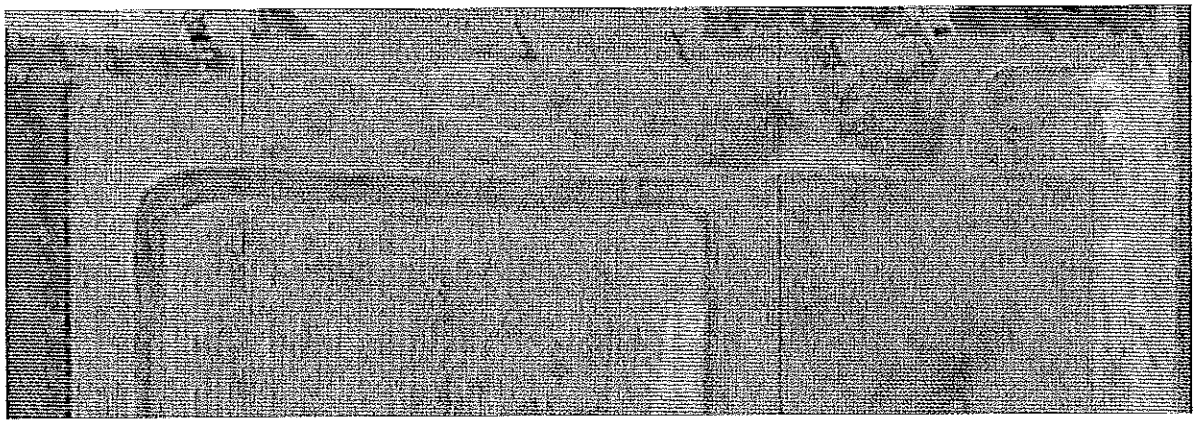
2 - trucks hauling 20 tons of rebar

2 – trucks hauling various moving equipments such as fork lifts

Wind Turbine Logistics

- **Observers were asked to remain on the East side of 11th Street**
- **Bleachers were provided on the East side of 11th Street**
- **Cars were not allowed on the West side of 11th Street**
- **Police Escort was required from I-40 Exit 329**
- **Point of origin for tower sections was Trinity, Texas**
  - **Transit time 8 hours**
- **Point of origin for nacelle was Pensacola, Florida**
  - **Transit time 22 hours**
- **Point of origin for blades was Tecis, Port of Import – Houston, Texas**
  - **Transit time 14 hours**


Several wires along this road need to be verified
Turbine Location
Exit 329
Google



WR - DEIS
Public Comment #516

Michelle, Kayce (UTC)

From: John Crumpacker [j[redacted]@gorge.net]
Sent: Friday, August 27, 2010 4:43 PM
To: EFSEC (UTC); ammontano@bpa.gov
Cc: 'Mike and Joyce Eastwick'; 'charlie guthrie'
Subject: Scamania County Agri-Tourism Assn. - Written Comments on DEIS
Attachments: Crumpacker Whistling Ridge DEIS Comments-Skamania County Agri-Tourism Assn.pdf

Dear EFSEC and BPA,

Please accept our written comments on the DEIS and make them part of the record in this matter.

Regards,
John Crumpacker
Board of Directors
Skamania County Agri-Toursim Assn.

Tel: 509.493.[redacted]
Fax: 509.493[redacted]
E-Mail:[redacted]@gorge.net

WHISTLING RIDGE WIND TURBINE DEVELOPMENT

WRITTEN DEIS COMMENTS

AUGUST 26, 2010

Written Comments of the Board of Directors

Skamania County Agri-Tourism Association,

a Washington Non-Profit Corporation

INTRODUCTION

The Skamania County Agri-Tourism Association is a Washington non-profit corporation dedicated to the promotion and improvement of sustainable agri-tourism in Skamania County. Our mission is to create and maintain favorable business conditions for association members. All members own and operate agricultural businesses in Underwood, Washington which is located in eastern Skamania County. Our unincorporated community sits directly across the Columbia from Hood River, Oregon. Members of the Skamania County Agri-Tourism Association include:

Member	Business
Acadia Vineyards	75 acre vineyard & orchard
Crooked Acres Vineyard	20 acre vineyard
The Davis Family Farm	50 acre farm & orchard
Energeia Vineyards	64 acre vineyard
Gorge Crest Vineyards & Winery	41 acre vineyard, winery & commercial event site
Gorge Estate Vineyards	95 acre vineyard & winery
Lamonti Vineyards	32 acre vineyard
Pearblossom Vineyards	18 acre vineyard & orchard
Sanctuary Herb Farm	18 acre herb farm and vineyard
Soluna Vineyards	34 acre vineyard
Underwood Gardens	6 acre lavender farm
Wine Spring	40 acre vineyard

As a group, these farms, vineyards and wineries currently give thousands of people each year a reason to visit our community and share in the awe inspiring beauty and bucolic charm. Some bring the entire family and 50 of their closest friends to say "I do"; some come to taste wine and touch grapes on the vine; some come to buy an organic free-range pig for a celebration; and others simply come because the views of the river, the Gorge, and the Hood River Valley

are unsurpassed. But more importantly for the purposes of this hearing, each of these people brings with them a domino effect of economic activity that benefits our entire region.

The Agri-Tourism Association hereby provides the Council and BPA (collectively referred to as "Council" herein) with our comments on the Whistling Ridge DEIS and the potential impact on our members and on agri-tourism in Underwood as a whole if the deficiencies in the DEIS are not corrected. We respectfully request that the DEIS and the Final EIS include consideration of the following alternatives which are absent or rejected in the DEIS:

1. Resiting of the seven most southerly "A Towers" (A1-A7) to a location within the proposed site that mitigates negative impacts;
2. Use of towers across the project with greater megawatt per tower ratings that will allow for the elimination of Towers A1-A7 with minimal impact on the proponents total megawatt output target of 75 MW;
3. Use of low profile towers across the project, and in particular at tower locations A1-7 to minimize negative impacts;
4. Elimination of towers A1-A7 through micro-siting across the project as a whole; and
5. Elimination of towers A1-A7 to mitigate negative impacts.

Such alternatives should be considered in the DEIS and the Final EIS to mitigate negative impacts based on the following five facts:

1. That tourism is the life blood of Skamania County and all communities throughout the Columbia River Gorge;
2. That Agri-Tourism is the present day driver of tourism in the famous Hood River Valley and that Underwood is well on its way to duplicating that economic success in Eastern Skamania County;
3. That Underwood's historic transformation from pear orchards to Agri-Tourism and to one of the premier wine producing regions in the world has enormous present-day socio-economic value;

4. That the very real present-day economic value of Underwood Agri-Tourism, as well as its future potential, would be severely impacted by the seven "A Towers" as currently sited; and finally
5. That this Council has the authority and responsibility to put the reins on this project by requiring the responsible re-siting or elimination of the seven "A Towers"; towers that will otherwise dominate the skyline and become Underwood's new "calling card."

As we detail in our written comments, failure to re-site the seven "A Towers" would improperly force the blossoming Underwood Agri-Tourism industry to bear a disproportionate share of the negative environmental and socioeconomic impacts of this project in violation of WAC 463-60-085. Such a result is prohibited by WAC 463-47-110 which states that "[t]he overriding policy of the council is to avoid or mitigate adverse environmental impacts which may result from the council's decisions."

TOURISM IS THE LIFE BLOOD OF THE GORGE

Facts

Skamania County is more dependent on tourism than any county in the State of Washington. (See Appendix 1). In 2007:

- 47% of all retail and lodging tax collections in the county came from visitors.
    - The highest percentage in the state.
- Almost 11% of all spending in Skamania County was travel related. Over 58 million dollars.
    - The highest percentage in the state.

Where do these figures come from? In December of 2008, the State of Washington, through the Department of Community Trade and Economic Development, which also employs the staff of this Council, released these findings in a report on the importance of Travel Impacts to the economy of this state.

The state concluded that the travel industry:

- Generates tax benefits for Washington residents.
- Generates job opportunities for Washington residents.
- And benefits all regions of the state.

This study found in particular that rural counties, including Skamania County, have a greater number of travel-generated jobs in relation to total employment. And that we are more dependent on the travel industry. They determined that over 10% of Skamania County's jobs are generated by tourism. Maybe this is no great surprise since we live in one of the most beautiful places on earth.

The State of Washington also released a report in 2002 titled "Travel Industry Employment." (See Appendix 1 to our DEIS Scoping Comments. All other references to appendices in these comments refer to the appendices attached to our Scoping Comments.). It was released by the Washington Department of Business & Tourism Development. They reached the same conclusions and found specifically that "[t]his is because some rural areas are recreation destinations and/or have little employment in manufacturing or other industries...." Once again topping the list are counties in the Columbia River Gorge.

Two key conclusions of this study:

- The travel industry develops and thrives "to the extent [it] has comparative advantages in the Northwest relative to other locations in the U.S.
- "[H]igh-quality, natural, and outdoor recreation resources" are an example of such an advantage.

Why does this all matter in the DEIS? Because any development proposal that has the potential to cut off the life blood of our economy needs to be closely monitored, carefully studied, and mitigated in a manner that eliminates damaging impacts.

AGRI-TOURISM DRIVES HOOD RIVER AND EASTERN SKAMANIA COUNTY

Facts

Hood River is a tourist mecca just like Skamania County. The Hood River Valley is famous worldwide for the breathtaking beauty of its farms, orchards and vineyards. In fact, Hood River is a case study in the economic power and sustainability of agri-tourism. You need look no further that the front page of the Hood River County Chamber of Commerce website. (See Appendix 2). The image of Hood River **IS** agri-tourism. It is plastered everywhere: pictures, events, festivals and links to other sites dedicated to agri-tourism in its many forms.

The other marketing push in Hood River? Recreation and scenery, of course. Just as the State of Washington has concluded in its studies, "high-quality, natural, and outdoor recreation resources" are our primary asset and must be leveraged. They must also be carefully guarded to assure our economic health and well being.

Why is Hood River important to consider? Because Underwood, which is in Eastern Skamania County, and which is the site of this proposal, sits directly across the Columbia from Hood River and is inextricably tied to Hood River: topographically, economically, and evolutionarily. Although our county seat is 30 miles away in Stevenson, we have a uniquely different set of issues and opportunities. Issues and opportunities that county government has failed to understand. This is evident in light of the county's decision to publically endorse this project without consideration of the impacts to Underwood agri-tourism. Agri-tourism that holds the key to Underwood's economic future... if it is responsibly cared for.

UNDERWOOD AGRI-TOURISM IS GROWING QUICKLY

Facts

The primary driver of agri-tourism in Underwood is its far reaching reputation as one of the premier wine producing regions in the world. (See Appendix 3). Amazing as it may sound, the new Columbia Gorge Wine Appellation was recently recognized as one the best emerging regions in the world along with Paso Robles, California and the Maule Valley in Chile. The same accolades were earned in Seattle Magazine.

In fact the Washington wine industry is now ranked as the second largest premium wine producer in the U.S. Washington Winery of the Year in 2009 was Maryhill Winery, located here

in the Gorge. Winery of the Year in 2007 was Cathedral Ridge Winery in Hood River, also located directly across the river from Underwood, and often touting Underwood wines. (See Appendix 3).

Even more to the point, Celilo Vineyards in Underwood, is consistently ranked as one of the Top 10 vineyards in Washington, which as mentioned, is ranked second nationally in the production of premium wines. The entire south slope of Underwood Mountain is considered the cream of the crop. If any question remains regarding the value of the wine industry in Underwood, we need look no further than the seal of approval of SDS Lumber who recently informed the community that it has purchased potential vineyard land in Underwood.

The DEIS naively accepts the proponents claim that "Wine and Wind" projects are de facto compatible because the uses co-exist in Walla Walla. The problem with this claim is that it ignores the fact that the wind projects in Walla Walla (like State-Line) are many miles from the vineyard and winery sites. The proposed A Towers, on the other hand, directly border the heart of Skamania County agri-tourism. No one argues that they will not dominate the landscape from upper Underwood. Resiting or elimination of Towers A1-7 eliminates all such impacts.

SOCIO-ECOMNOMIC VALUE OF UNDERWOOD AGRI-TOURISM

Facts

Agri-Tourism is a reality in Underwood as we sit here today. There are over 30 large scale agricultural operations within the community. Some of these enterprises were started generations ago, and others have broken ground within the last year. In many ways, the Skamania County Agri-Tourism Association owes its new found status to the proposal before you. We have formally come together for the first time out of necessity. A necessity borne from the threat that this project poses to our very existence.

Although our members have each made extraordinary commitments of time and capital to the common vision of making Underwood the premier agri-tourism destination in the Gorge, until recently, we were working in parallel, rather than in concert. The threat that this project poses to that vision, however, immediately galvanized farm, winery, and vineyard owners across the community. We now stand here with a consensus of opinion, not just on this project, but on future lobbying goals, marketing strategies, and product offerings.

The Association has two primary marketing strategies:

- Promote the "Underwood Agri-Tourism Loop" in a manner similar to the Hood River Fruit Loop.
    - The Hood River Fruit Loop is considered a national model for successful agri-tourism
    - See Appendix 2 (Fruit Loop) and Appendix 4 (Underwood Agri-Tourism Loop)

- Establish the Underwood Vineyard Trek as a "can't be missed" one-of-a-kind opportunity to hike through 12 of the country's premier vineyards while sampling world class wines and views.
    - Nowhere else in the U.S. have 12 contiguous vineyards collectively developed a private trek situated in the heart of a National Scenic Area.
    - See Appendix 4 (Underwood Vineyard Trek)

Underwood Agri-Tourism is not just about wine. Other members offer produce, free-range organic livestock, lavender viewing, and organic herbs. One of the original visionaries in Underwood is Hank Patton, who founded World Steward which is located in the Upper Underwood Agri-Tourism Loop, and is committed to environmental stewardship, sustainable farming, research and education. (See Appendix 4).

In addition, three wineries are already in operation in Underwood. One of those wineries is now considered by many to be the premier commercial events site in the Columbia Gorge. A number of other vineyards located in the Upper Loop have future winery plans which have been put on hold as a result of the potential negative impacts of this proposal.

As set forth in Appendix 4 to our comments, the economic and socioeconomic value of the existing Underwood Agri-Tourism industry is significant and quantifiable. It is diverse and sustainable and benefits citizens and governments throughout the region. The tremendous future potential is also quantifiable and dwarfs the tax benefits of the seven A Towers as projected by SDS Lumber. (See Appendix 1, 2, 3 & 4-Economics of Wine in Underwood).

AGRI-TOURISM & 40 STORY TURBINES DON'T MIX

Facts

SDS once told the Underwood community that wind turbines are "beautiful." We are all welcome to our personal opinions, but in these proceedings facts should rule. And the fact is

that tourists, and especially tourists in the Gorge, don't want to see industrial development. This fact is set forth clearly in studies conducted by the U.S. Government, and the State of Oregon which are attached to our comments as Appendix 5 and Appendix 6. These facts are undisputed and need no further discussion.

As set forth above, the DEIS naively accepts the proponents claim that "Wine and Wind" projects are de facto compatible because the uses co-exist in Walla Walla. The problem with this claim is that it ignores the fact that the wind projects in Walla Walla (like State-Line) are many miles from the vineyard and winery sites. The proposed A Towers, on the other hand, directly border the heart of Skamania County agri-tourism. No one argues that they will not dominate the landscape from upper Underwood. Resiting or elimination of Towers A1-7 eliminates all such impacts.

MOVING THE "A TOWERS" MITIGATES TOURISM IMPACTS

Facts

The seven "A Towers" sit alone on a clear-cut ridge at the very most southern portion of the proposed project. If installed they would dominate views, day and night, from far more locations than are depicted in the application submitted to Council. To remove any uncertainty about the visual impacts of the seven A Towers, the Agri-Tourism Association hired a pilot to fly a photographer along the ridge where these towers are proposed. In Appendix 7 to our comments, you will find the results. Take note of the photograph that was taken directly over the ridge at an elevation of 300 feet above the ridge. This photograph tells the story of who will see the seven A Towers. Also note that the photograph was taken 120 feet below the top of the proposed towers.

Then take note of the next photograph that shows the locations of existing businesses along the Underwood Agri-Tourism Loop. The impacts are clear. The solution is also clear. The re-siting of the seven A Towers eliminates all visual impacts to the Underwood Agri-Tourism industry, as well as the visual impacts to a vast area throughout the Gorge.

CONCLUSION

We are very thankful that the Council brings to this process a broad perspective of the benefits and impacts of wind development. A perspective that is understandably missing from a county government in financial crisis.

We are also confident that this council will use its broad mitigation powers, its depth of experience and basic common sense to draw a line in the sand. A line that will make it clear to people throughout the country that in the Northwest, turbines don't have a right to dominate every ridgeline just because the wind blows.

We feel fortunate. Fortunate that each of you has visited the Gorge, and fortunate that during your site visit, you were able to experience the extraordinary beauty of our agricultural community and understand why it is a priceless resource in and of itself...not just to those of us who live Underwood, but to people throughout the Gorge who benefit economically from its snowballing reputation as one of the premier wine producing destinations in the United States.

For the reasons set forth above, we respectfully request that the DEIS and the Final EIS include consideration of the following alternatives which are absent or rejected in the DEIS:

1. Resiting of the seven most southerly "A Towers" (A1-A7) to a location within the proposed site that mitigates negative impacts;
2. Use of towers across the project with greater megawatt per tower ratings that will allow for the elimination of Towers A1-A7 with minimal impact on the proponents total megawatt output target of 75 MW;
3. Use of low profile towers across the project, and in particular at tower locations A1-7 to minimize negative impacts;
4. Elimination of towers A1-A7 through micro-siting across the project as a whole; and
5. Elimination of towers A1-A7 to mitigate negative impacts.

***

We also direct Council to our comments on the land use consistency issues which are attached hereto and incorporated herein by this reference.

WHISTLING RIDGE WIND TURBINE DEVELOPMENT

LAND USE CONSISTENCY HEARING

May 7, 2009

Written Comments of the Board of Directors

Skamania County Agri-Tourism Association,

a Washington Non-Profit Corporation

INTRODUCTION

My name is John Crumpacker; I live in Underwood, Washington. I am a member of the Board of Directors of the Skamania County Agri-Tourism Association. The Skamania County Agri-Tourism Association is a Washington non-profit corporation dedicated to the promotion and improvement of sustainable agri-tourism in Skamania County. Our mission is to create and maintain favorable business conditions for association members. All members own and operate agricultural businesses in Underwood, Washington which is located in eastern Skamania County. Members of the Skamania County Agri-Tourism Association include:

Member	Business
Acadia Vineyards	75 acre vineyard & orchard
Crooked Acres Vineyard	20 acre vineyard
The Davis Family Farm	50 acre farm & orchard
Energeia Vineyards	64 acre vineyard
Gorge Crest Vineyards & Winery	41 acre vineyard, winery & commercial event site
Gorge Estate Vineyards	95 acre vineyard & winery
Lamonti Vineyards	32 acre vineyard
Pearblossom Vineyards	18 acre vineyard & orchard
Sanctuary Herb Farm	18 acre herb farm and vineyard
Soluna Vineyards	34 acre vineyard
Underwood Gardens	6 acre lavender farm
Wine Spring	40 acre vineyard

The Agri-Tourism Association is here today to provide the Council with our comments on the Land Use Consistency issues posed by the proposed Whistling Ridge project and the potential impact on our members. Today we will again confine our comments to the seven "A Towers." We will address two issues: (1) Why the proposed "A Towers" are inconsistent with the county land use policy; and (2) Why simply moving them prevents these violations.

THE SEVEN "A TOWERS" ARE INCONSISTENT WITH CURRENT ZONING AND EXISTING USES

In the land use portion of its application, SDS suggests that this project will diversify the use of its land and, in turn, the county's economy. Next they state that this "natural resource-based land use would better insulate the Applicant from economic cycles that have undermined similar timber operations...." What they don't mention is that the "A Towers" would sit on land that is specifically set aside for just the opposite purpose: to protect and insulate existing uses such as the agricultural operations of the members of the Skamania County Agri-Tourism Association. Operations which continue to diversify the county's tourism based economy, and barring the "A Towers," are not at risk of economic failure.

We will discuss applicant's claims in the order they are presented in Part 4.2 of the application which addresses weather the "A Towers" would comply with the controlling conditional use requirements.

The first requirement is that the seven "A Towers"

> *Be either compatible with other uses in the surrounding area or is no more incompatible than are other outright permitted uses in the applicable zoning district.*

The applicant, and for that matter, the county, never took the time to study the socio-economic value of agri-tourism and why the A Towers are incompatible with such outright permitted uses. Our appendix of data establishes complete incompatibility and is based on research conducted by the U.S. government, the State of Washington, and the State of Oregon. This is not a wheat field surrounded by nothing. The A Towers would loom over one of the country's premier winemaking regions and the most valuable agri-tourism land in Skamania County.

To claim that these towers are "no more incompatible with the surrounding area than other uses permitted in the County's zoning code," is uninformed. To say that this "project would in no way impair the use of any of the surrounding lands" conveniently ignores the years of work and the capital invested by members of the Agri-Tourism Association, not to mention the high regulatory hurdles we have so painstakingly cleared. The fact is that nowhere in this state have 420 foot turbines been approved as permanent fixtures on a ridge with such profound compatibility concerns.

The next requirement is that the project

> *Not materially endanger the health, safety, and welfare of the surrounding community to an extent greater than that associated with other permitted uses in the applicable zoning district.*

The seven "A Towers" are the single greatest threat to the economic welfare of the Agri-Tourism community in Underwood. Our comments yesterday address this issue and no more needs to be said today.

Next, the project may

> *Not hinder or discourage the development of permitted uses on neighboring properties in the applicable zoning district as a result of the location, size or height of the buildings, structures, walls, or required fences or screening vegetation to a greater extent than other permitted uses in the applicable zoning district;*

The application states that the "turbines in the corridor proposed in the For/Ag-20 zones would be approximately 426 feet tall" and that "the proposed turbines would be taller than other structures permitted outright in the For/Ag-20 zone." The application claims that their height and visibility would not hinder or discourage the development of any of the uses identified in Table 4.2-2. Just the opposite is true. Commercial agriculture, a permitted use in Table 4.2-2 is the very basis of agri-tourism, which as proven in Hood River, can drive the economy of an entire county. And as established in the data we submitted yesterday, the seven "A Towers" are incompatible with agri-tourism and have therefore caused a number of wineries to table development plans.

This council deserves better than applicant's bare claim that "the project would in no way hinder the use or development of surrounding properties."

MOVING THE "A TOWERS" ELIMINATES THE VIOLATION OF THE COUNTY'S ZONING POLICY

The last of the conditional use requirements for the "A Towers" leads us to the policies behind our county's land use law. It requires that this project:

Not be in conflict with the goals and policies expressed in the current version of the County's comprehensive plan.

The policies behind the For/Ag-20 zone more clearly explains why the "A Towers" don't belong. The county policy for the Resource Production Zone is:

> *To provide land for present and future commercial farm and forest operations in areas that have been and are currently suitable for such operations, and to prevent conflicts between forestry and farm practices and nonresource production uses by not allowing inappropriate development of land within this zone classification" (SCC 21.56.010[A]).*

(Emphasis added.) This is a clear statement that the conflict the "A Towers" create should not be allowed.

This same conclusion must be reached by applying the County's own vision statement for our community which states that:

> Skamania County is strongly committed to protecting our rural character and natural resource based industries while allowing for planned future development that is balanced with the protection of critical resources and ecologically sensitive areas, while preserving the community's high quality of life.

(Emphasis added.)

CONCLUDING REMARKS

As the Council may have gathered, the "A Towers" are very different than the rest of this project. And they deserve to be treated differently.

These comments, and the supporting data, will be submitted to Council and posted on the "News" page of the Skamania County Agri-Tourism Association web site which is located at www.scaassn.org Thank you.

WR - DEIS
Public Comment #517

Michelle, Kayce (UTC)

From: repar [[redacted]@saw.net]
Sent: Friday, August 27, 2010 4:47 PM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge DEIS-Solar storms and power grid-Repar-7
Attachments: Comments_Solar storms and the power grid_27Aug2010.doc

Dear EFSEC,
Attached, please find my comments and questions about the effects of solar storms on the power grid. Thank you.

Mary J. Repar
[redacted] E. Loop Rd. [redacted]
Stevenson, WA 98648
Tel: 509.427.[redacted]
E-mail: [redacted]@saw.net
"Life is not measured by the number of breaths we take but by the moments that take our breath away."

Mary J. Repar
[redacted] E. Loop Rd., [redacted]
Stevenson, WA 98648
Tel: 509.427.[redacted]

27 August 2010

EFSEC
905 Plum Street SE
Olympia, WA 98504-3172
e-mail: [redacted]@commerce.wa.gov

BPA
Public Affairs Office – DKE -7
P.O. Box [redacted]
Portland, OR 97293-4428
Toll-free comment line: 800.622.[redacted]
FAX: 503.230.[redacted]
503. 230. [redacted]
www.bpa.gov/comment

Re: Comments on solar storms and their effects on the power grid and transmission lines—and the inadequacy of information on the subject in the Whistling Ridge DEIS

Dear EFSEC and BPA,

I am greatly concerned that there is not a section in the DEIS that give us information on transmission lines and how they are susceptible to solar storms. There is enough literature and data widely available, see my References #1 and #2, below that could have been used to fill this information gap in the DEIS.

The more transmission lines are built, the greater their exposure to solar storms. If BPA is (and we all know that they are) proposing to build more and more transmission lines in our region, and if these lines are bigger than existing infrastructure, I think that should be part and parcel of this DEIS discussion. More transmission lines vulnerable to solar storms put us all at risk of blackouts.

I don't know enough technical details about this issue but I would like to know more and I think the DEIS should contain this information and answer questions about power grid vulnerabilities. **The DEIS does not contain this information. Therefore, the DEIS is incomplete.**

Sincerely,

/e-signature/Mary J. Repar
27 August 2010

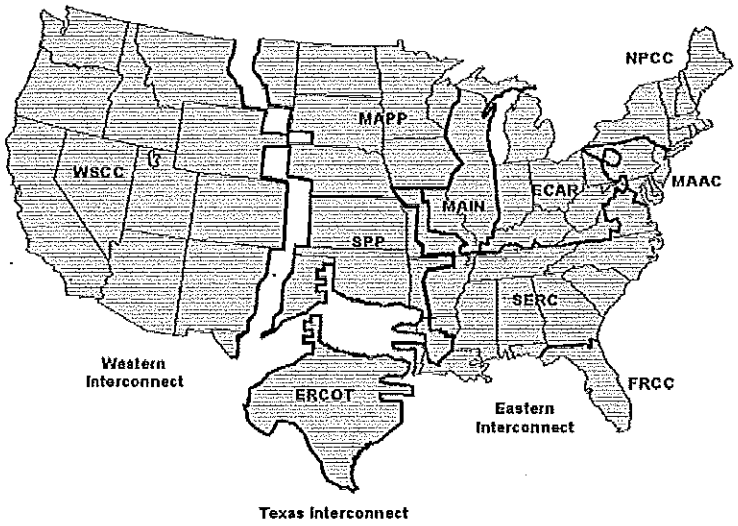
Reference #1/ http://www.solarstorms.org/Spower.html

Blackouts

Power Grid

Pipelines

Water



The US power grid is a complex electrical apparatus that has well-known sensitivities to space weather disturbances. Recent changes in its design and utilization have significantly reduced its operating margins to supply us with on-demand electricity. This means there is less flexibility available with which to deal with power shortages and blackouts.

Space weather events can damage equipment over wide geographic regions so that recovery delays become substantially longer and more costly.

The 23rd Cycle - Chapter 4 - Describes in detail the state of the US power grid, and the forces which are driving it to be far more vulnerable to solar storms than at any time in the past.

"As North America has evolved into a unified power-sharing network of regions, each buying and selling a diminishing asset, US domestic power has become more vulnerable to solar storms buffeting the power grid in the more fragile northern-tier states and Canada. So long as one region continues to have a surplus at a time when another region needs a hundred megawatts, power is 'wheeled' through 1000-mile power lines to keep supply and demand balanced across the grid. In 1972, a typical utility might need to conduct only a few of these electromagnetic transactions each week. Now, it is common

for thousands to be carried out, often by computer, in much the same way that stocks are traded on Wall Street...

The electrical power grid is composed of many elements, and you can think of it as a set of rivers flowing overhead. Large rivers carry the electricity from distant generation stations (Dams, Hydroelectric Facilities and Nuclear Plants) on supply lines of 138,000 volts or higher. These are carried as three cables (2 'hot' and one defining the 'ground' in a 3-phase system) suspended atop 100-foot tall towers that you will see out in many rural areas. These supply cables terminate at regional substations where the high voltages are converted into lower voltages from 69,000 volts to 13,800 volts. These lines then enter your neighborhoods atop your local telephone poles where a neighborhood transformer steps this voltage down to 220 and supplies a dozen or so individual houses.

When space weather disturbances cause 'Geomagnetically Induced Currents' , these GICs can enter a transformer through its Earth ground connection. The added DC current to the transformer causes the relationship between the AC voltage and current to change at the source of the electricity, not just where it is delivered to your electrical appliance. Because of the way that GIC currents affect the transformer, it only takes a hundred amperes of GIC current or less to cause a transformer to overload during one-half of its 60-cycle operation. As the transformer switches 60 times a second between being saturated and unsaturated, the normal hum of a transformer becomes a raucous, crackling whine. Regions of opposed magnetism as big as your fist in the core steel plates crash about and vibrate the 100-ton transformer nearly as big as a house in a process that physicists call magnetostriction.

The impact that magnetostriction has upon specific transformers is that it generates hot spots inside the transformer where temperatures can increase very rapidly to hundreds of degrees in only a few minutes. Temperature spikes like these can persist for the duration of the magnetic storm which, itself, can last for hours at a time. During the March 1989 storm, a transformer at a nuclear plant in New Jersey was damaged beyond repair as its insulation gave way after years of cumulative GIC damage. Allegheny Power happened to be monitoring a transformer that they knew to be flaky. When the next geomagnetic storm hit in 1992. They saw the transformer reply in minutes, and send temperatures in part of its tank to more than 340 F (171 C). Other transformers have spiked fevers as high as 750 F (400 C). Insulation damage is a cumulative process over the course of many GICs, and it is easy to see how cumulative solar storm and geomagnetic effects were overlooked in the past.

Outright transformer failures are much more frequent in geographic regions where GICs are common. The Northeastern US with the highest rate of detected geomagnetic activity led the pack with 60% more failures. Not only that, but the average working lifetimes of transformers is also shorter in regions with greater geomagnetic storm activity. The rise and fall of these transformer failures even follows a solar activity pattern of roughly 11 years.

If your power plant is located over a rock stratum with low resistance, any geomagnetic disturbance will cause a bigger change in the voltages it induces in your local ground, and the bigger this change in ground voltage, the stronger will be the GIC currents that flow into your transformers. Typical daily GICs can run at about 5-10 amperes, but severe geomagnetic storms can cause 100-200 amperes to flow.

A conservative estimate of the damage done by GICs to transformers by Minnesota Power and Electric was $100 million during a solar-maximum period. This includes the replacement of damaged transformers, and the impact of shortened operating lifetimes due to GIC activity.

Large transformers cost $10 million, and can require a year or more to replace if spares are not available. During a transformer failure, an affected utility company will have to purchase replacement power from other utilities for as much as $400,000 per day or more. Oak Ridge National Laboratories, meanwhile, estimated that a solar storm event only slightly stronger than the one that caused the Quebec blackout in 1989 would have involved the Northeast United States in a cascading blackout. The experts figured that about $6 billion in damages and lost wages would have resulted from such a widespread involvement. The North American Electric Reliability Council (NAERC) placed the March 1989 and October 1991 storm events in a category equivalent to Hurricane Hugo or the 1989 Loma Prieta Earthquake in San Francisco. But, many consultants for the power industry dispute NAERC's estimate saying that it is much too low. The $6 billion may not properly include collateral impacts such as lost wages and productivity, spoiled food and a myriad of other human costs that could easily run the losses into the tens of billions of dollars."

Congressional Testimony **(See Reference #2 at the end of this document)** - On October 30, 2003 the House of Representatives, Subcommittee on Environment, Technology and Standards convened a session 'What is Space Weather and who should forecast it?'. The following is an excerpt of the testimony by John Kappenman, Manager, Applied Power Systems, Metatech Corporation:

"While electricity customers receive power from the local distribution system (typical operating voltage of 15kV with step down to 120/240 volt), the backbone of the system is the high voltage transmission network. The primary AC transmission network voltages in the U.S. are at 230kV, 345kV, 500kV and 765kV. These transmission lines and their associated transformers serve as the long distance heavy hauling arteries of electricity production in the U.S. A single 765kV transmission line can carry over 2000 MW of power, nearly 200 times what a typical 15kV distribution line which is the overhead line commonly used for residential distribution. Space Weather or geomagnetic disturbances directly attack this same high voltage transmission circulatory system and because both have continental footprints, these disturbances can rapidly erode reliability of these infrastructures and can therefore threaten widespread blackout for extreme disturbance events. The U.S. electric power grid is the world's most extensive, Figure 1 provides a map of the approximate location of the nearly 80,000 miles of 345kV, 500kV and 765kV transmission lines in the contiguous U.S....

In spite of the best efforts, failures still can occur; for example, a lighting strike can still cause on occasion a high voltage transmission line to trip. Very high winds, for example, due to a tornado can cause the failure of a line or several lines on a common corridor. However, most of these events generally occur in isolation and power grids are operated at all times to withstand the largest creditable single contingency failure without causing a cascading collapse of the network itself. Space Weather differs from ordinary weather in that it has a big footprint and attacks the system across many points simultaneously, causing at times of severe events multi-point failures on the network that can threaten the integrity of the network. Therefore, geomagnetic storms may be one of the most important hazards and is certainly the least understood threat that could be posed to the reliable operation of these networks...

There were several noteworthy cases of transformer internal heating associated with the March 13, 1989 storm in the U.S. mid- Atlantic Region. In one case at the Salem Nuclear plant in southern New Jersey, the internal heating was so severe that complete failure of the transformer resulted. Figure 7 provides a few pictures of the transformer and internal winding damage (conductor melting and insulation burns) due to the GIC exposure. In this case the entire nuclear plant was unable to operate until the large 500kV 1200MVA transformer was replaced. Fortunately a spare from a canceled nuclear plant in Washington State was available and restoration of the plant occurred in 40 days. Transformers of this type are of custom design and in most cases new replacement transformers of this type generally take up to a year for delivery. Failures of key apparatus, such as this, raise concerns about the ability to rapidly restore power in a region once a blackout and failure has occurred...

We are looking at the potential of blackouts that could exceed even that of the very large blackout that occurred just a few months ago [August 14, 2003]. And there is no part of the U.S. power grid that is immune to this. It is just a matter of where does this intense phenomenon geographically lay down? How big is the footprint? And we know these footprints can be very, very large. And literally, we could impact over 100 million population in the worst case scenarios."

2002-Department of Energy - National Transmission Grid Study "Over the past 10 years, competition has been introduced into wholesale electricity markets with the goal of reducing costs to consumers. Today, wholesale electricity sales save consumers nearly $13 billion annually. However, the Nation's outdated transmission system was not designed to support today's regional, competitive electricity markets. Investment in the transmission system has not kept pace with the growth in generation and the increasing demand for electricity. Transmission bottlenecks threaten reliability and cost consumers hundreds of millions of dollars each year. "

The Changing Structure of the Electrical Power Power Grid ca 2000 - This study by the Department of Energy describes the impact that deregulation will have on the operation of the Grid.

National Security Telecommunications Advisory Committee - Provides a detailed assessment of the many risks that our power grid faces. "The Electric Power Risk Assessment" subgroup found no evidence of power outages attributed to deliberate electronic intrusion into utility control systems. The greatest risk facing the electric power infrastructure of the United States remains physical damage and destruction. Compared to the threat posed by natural disasters and physical attacks on electric power infrastructure elements, electronic intrusion represents an emerging, but still relatively minor, threat. However, changes within the electric power industry and in technology are increasing the risk posed by electronic intrusion. "

2004 - Penn State Study of Power Grid Failure - The team's topological analysis of the grid structure reveals that, although the system has been designed to withstand the random loss of generators or substations, its integrity may depend on protecting a few key elements.

"Our analysis indicates that major disruption can result from loss of as few as two percent of the grid's substations," says Albert, whose research team includes Istvan Albert, research associate in the Bioinformatics Consulting Center at Penn State, and Gary L. Nakarado at the National Renewable Energy Laboratory.

One implication of the research is that identification of strategic points in the grid system can enhance defense against interruptions, whether by equipment failure, natural disasters or human activity. Major blackouts caused by failures in the grid, such as the one that affected the northeastern part of the country during the summer of 2003, incur tremendous economic, public-health and security risks.

The study, titled "Structural Vulnerability of the North American Power Grid," was published in a recent issue of the journal Physical Review E. The researchers constructed a model of the entire transmission grid with over 14,000 "nodes," including generators, transmission substations, and distribution substations, and over 19,000 "edges," corresponding to the high-voltage transmission lines that carry power between the nodes. They measured the importance of each substation node based on its "load," or the number of shortest paths between other nodes that pass through it.

Blackouts

Electrical power blackouts and 'sags' cost the US about $80 billion every year in lost services, industrial capacity and Gross Domestic Product. Blackouts caused by space weather events are potentially more devastating than a major hurricane landfall. The space weather 'Storm of the Century' could cause hardships more severe than anything we have thus far experienced.

Congressional Testimony - On October 30, 2003 the House of Representatives, Subcommittee on Environment, Technology and Standards convened a session 'What is Space Weather and who should forecast it?'. The following is an excerpt of the testimony by John Kappenman, Manager, Applied Power Systems, Metatech Corporation: " Some of the first reports of operational impacts to power systems date back to the early 1940's

and the level of impacts have been progressively become more frequent and significant as growth and development of technology has occurred in this infrastructure. In more contemporary times, major power system impacts in the U.S. have occurred in storms in 1957, 1958, 1968, 1970, 1972, 1974, 1979, 1982, 1983, and 1989 and several times in 1991. Smaller scale impacts can and do occur even more frequently; these include anomalous operating events that may result in the unexpected tripping of a key element of the system or **even permanent damage to apparatus such as large power transformers**... [my bold emphasis]

The most important of these impacts was the **storm-caused chain of events resulted in the blackout of the Hydro-Quebec power system.** At 2:42 am EST, all operations across Quebec, Canada were normal. At 2:43 am EST, a large impulse in the Earth's magnetic field erupted along the U.S./ Canadian border. GICs immediately started to flow in the southern portions of the Hydro-Quebec grid. In reaction to the GIC, voltage on the network began to sag as the storm increased in magnitude; automatic voltage compensating devices in the network rapidly turned ``on" to correct this voltage imbalance. Unfortunately these compensators themselves were vulnerable to the harmonics generated in the network's transformers, and mis-operation of relays to protect these devices caused the entire fleet of 7 compensators on the network to shut down within 60 seconds of the beginning of the storm impulse. When the compensators shut down, the network collapse followed within a matter of seconds, **putting over 6 million inhabitants of the province in the dark**. Going from normal conditions to a complete province-wide blackout occurred in an elapsed time of just 90 seconds. The power system operators had no time to understand what was happening, let alone to take any meaningful human action to intervene and save the grid...

While power grid reliability concerns are of paramount importance, the long duration of the storm and associated GICs in transformers on the network **caused internal transformer heating to the point of failure**. There were several noteworthy cases of transformer internal heating associated with the March 13, 1989 storm in the U.S. mid-Atlantic Region. **In one case at the Salem Nuclear plant in southern New Jersey, the internal heating was so severe that complete failure of the transformer resulted...**

However, just empirical evidence alone suggests that power grids in North America that were challenged to collapse for storms of 400 to 600 nT/min over a decade ago, are not likely to survive the plausible but rare disturbances of 2000 to 5000 nT/min that long-term observational evidence indicates have occurred before and therefore may be likely to occur again...

All mass transit systems shutdown as they depend on electricity for many of their functions. Traffic signal systems on most major streets and highways stopped and as a result most major thoroughfares became the equivalent of 8 lane parking lots in the early hours of the blackout. Only a few major power facilities are continuously manned, and since blackouts are possible at any hour, the odds are that 75 percent of the time the normal utility day crews are not on the job when these events occur. Attempting to recall

workers that are trapped on the wrong side of these transportation snares is highly problematic...

Because of the possible large geographic laydown of a severe storm event and resulting power grid collapse, the ability to provide meaningful emergency aid and response to an impacted population that may be in excess of 100 million people will be a difficult challenge. Potable water and replenishment of foods may need to come from boundary regions that are unaffected and these unaffected regions could be very remote to portions of the impacted U.S. population centers. As previously suggested adverse terrestrial weather conditions could cause further complications in restoration and resupply logistics."

Lawrence Berkeley Labs Study, In 2005, Kristina Hamachi-LaCommare and Joe Eto for the U.S. Department of Energy's Office of Electric Transmission and Distribution completed a study of the costs to the US from a variety of chronic electrical 'sags' and short-term losses of service. - "The study estimates the total cost to the U.S. of power interruptions at about $80 billion per year. Of this, $57 billion (73 percent) is from losses in the commercial sector and $20 billion (25 percent) in the industrial sector. "The reason for the commercial sector's high share of these cost is the large number of commercial sector customers, which includes small as well as large businesses, and the high cost per outage per customer,"

August 14, 2003 Blackout - ICF Consulting produced an assessment of the economic impact of this recent electrical blackout that affected 50 million people in 8 states . "Specifically, for this analysis, we assume that the initial outage of 61,800 MW lasted for 4 hours and then half of that was restored, with the other half (30,900 MW) being the shortfall for another 10 hours. Given that the next announcement from NERC was issued approximately 18 hours after the start of the outage, we assume that another one-half of the unserved 30,900 MW was restored after 14 hours and the remaining loss of 15,450 MW lasted for the subsequent 4 hours. This gives a total of 18 hours for the first phase of the blackout. Using similar arguments for the remaining period of the blackout, we assume more than 13,000 MW of customer load was lost for another 14 hours after which 6,600 MW was the shortfall for another 10 hours. Finally, on the third day of this blackout, 2,000 MW was the loss for 20 hours and another 1,000 MW was the shortfall for the final 10 hours of this blackout. This gives a total outage period of 72 hours. Using this scenario and the average electricity price for the affected region from August 2002, the economic cost of this outage is estimated to be between $7 and $10 billion for the national economy. "

Investigation of August 2003 Blackout - The North American Energy Reliability Council conducted an investigation of how the blackout happened, and its detailed impacts. A space weather storm would share many elements in common with this event, except that the electrical equipment damage would be far more wide spread. Their findings are summarized in **Section 5** of this document.

The following blackouts are not known to have been caused by space weather:

September 23, 2002, - A massive power failure disrupted central Chile, including the capital city of Santiago. Some 3,500 passengers had to be rescued from stalled Metro trains in Santiago.
April 29, 2003, a power failure hit the airport in Melbourne, Australia, disrupting operations for 90 minutes.
November 24, 2002 - Buenos Aires and La Plata, Argentina, were hit by a huge power failure.
January 31, 2003 - An 'unusual' power failure hits Cambridge, Ontario.
August 6, 2003 - Buenos Aires was hit again by another sudden blackout . Power company officials blamed that outage on the collapse of three power lines
August 18, 2003 - 4.5 million people in Georgia lost electricity; the Tblisi metro ground to a halt and the water supply was cut off.
August 23, 2003 - Finland's capital Helsinki and suburbs, including the international airport at Vantaa, were blacked out. Saturday evening's revelers at Helsinki's Linnanmäki amusement park had to be rescued when the blackout left them dangling in rides in midair. Even Radio Suomi, which relies on emergency generators, went off the air when both its generators and backup battery power failed.
August 28, 2003 - the BBC reported that at the height of London's evening rush hour, a massive power outage struck the city and southeast England. 1800 trains stopped, including 60 percent of the London Underground, an event that Britain's Network Rail called "unprecedented."
September 1, 2003 - At 10 o'clock the city and five other Malaysian states were struck by a massive blackout. Workers in the Petronas Towers, the world's tallest buildings, were trapped in elevators and with signal lights out, traffic in downtown Kuala Lumpur ground to a virtual halt.
September 2, 2003 - Cancun, Mexico, which was swarming with tourists and advance teams for the following week's World Trade Organization meeting, also found itself plunged into a blackout. The power failure struck Quintana Roo state on the Yucatan peninsula and two neighboring states. Power was out for six hours and affected 3 million people.
September 23, 2003 - Eastern Denmark and southern Sweden, including the cities of Copenhagen and Malmo, lost power in what was described as a "very unusual" blackout. Four million people were affected, including passengers stranded on board trains and at Copenhagen's busy international airport. Factories on the island of Zealand and in southern Sweden stopped production and the Oresund Bridge linking Denmark to Sweden was closed to traffic. [International Herald Tribune]
September 28, 2003, - A massive power failure struck Italy, leaving 57 million people without electricity. A simultaneous blackout plunged Geneva, Switzerland, into darkness. The blackout cut off electricity to Vatican City and Pope John Paul II had to rely on emergency generators to power amplifiers in order to deliver his Sunday sermon. Thirty-thousand passengers were stranded on trains throughout the country. The blackout was later blamed on a tree hitting a high voltage transmission line in Switzerland.

Reference #2, Congressional Testimony on Solar Storms and Power Grids

[108th Congress House Hearings]
[From the U.S. Government Printing Office via GPO Access]
[DOCID: f:90161.wais]

WHAT IS SPACE WEATHER AND
WHO SHOULD FORECAST IT?

HEARING BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT, TECHNOLOGY,

AND STANDARDS

COMMITTEE ON SCIENCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

OCTOBER 30, 2003

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October 30, 2003

Opening Statements

WHAT IS SPACE WEATHER AND

WHO SHOULD FORECAST IT?

THURSDAY, OCTOBER 30, 2003

House of Representatives,
Subcommittee on Environment, Technology, and

Standards,

Committee on Science,

Washington, DC.

The Subcommittee met, pursuant to call, at 10 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Vernon J. Ehlers [Chairman of the Subcommittee] presiding.

<GRAPHIC(S) NOT AVAILABLE IN TIFF FORMAT>

hearing charter

SUBCOMMITTEE ON ENVIRONMENT, TECHNOLOGY, AND STANDARDS

COMMITTEE ON SCIENCE

U.S. HOUSE OF REPRESENTATIVES

What Is Space Weather and

Who Should Forecast It?

thursday, october 30, 2003
10:00 a.m.-12:00 p.m.

2318 rayburn house office building

Purpose

On October 30, 2003 at 10:00 a.m., the House Science Committee's Subcommittee on Environment, Technology and Standards will hold a hearing to examine the space weather activities at the National Oceanic and Atmospheric Administration's (NOAA) Space Environment Center. The Space Environment Center (SEC) provides real-time monitoring and forecasting of solar and geophysical events. These events can: cause damage to communication satellites, electric transmission lines and electric transformers; interfere in ground-based communications with airline pilots; be fatal to astronauts on space flights and in the International Space Station; and potentially harm airplane passengers flying polar routes. SEC forecasts are used by the U.S. military, the National Aeronautics and Space Administration (NASA), NOAA itself, and by the industries mentioned above. For example, just last Wednesday (October 22), the SEC released two-day advanced warnings about an unusually large solar storm, which allowed electrical utilities, airlines, and spacecraft managers to take preventive action to minimize disruption of service due to the storm. (See attachment.)

The Air Force Weather Agency works closely with NOAA's SEC on the collection of space weather data through satellite and ground-based sensors and provides warnings tailored for specific military needs. The Air Force relies on the SEC for data analysis and overall forecasting. The Air Force and NOAA each contribute to the cost of sensors to

monitor space weather, and NASA provides many of the satellites on which the sensors are carried.

In the House Fiscal Year (FY) 2004 Commerce, Justice and State (CJS) appropriations bill, SEC funding levels are below the Administration's request. The Senate CJS Appropriations Committee report includes the suggestion that the Air Force or NASA should take on the duties of predicting space weather and contains no funding for SEC. Thus, budget constraints could force the closure or reduction of these vital and unique services provided by NOAA's SEC. The Subcommittee wants to better understand the potential impact of the loss of SEC services.

The Subcommittee plans to explore several overarching questions, including:

1. LWhy do we need to understand and forecast space weather events?

2. LWhat unique capabilities and expertise does NOAA's SEC provide? To what extent could the Air Force or NASA perform these duties?

3. LWhat are the implications of closure or reduced activities of NOAA's SEC to the government and private sector?

Witnesses:

Dr. Ernest Hildner, Director, Space Environment Center, National Oceanic and Atmospheric Administration (NOAA), Boulder, Colorado. Dr. Hildner will provide an overview of the SEC, the services it provides and its collaborations with other federal agencies.

Col. Charles L. Benson, Jr., Commander, Air Force Weather Agency, Offutt Air Force Base, Nebraska. Colonel Benson will explain the mission of Air Force Space Weather Operations Center and the way the Air Force and NOAA work together on space weather prediction.

Dr. John M. Grunsfeld, Chief Scientist, National Aeronautics and Space Administration (NASA). Dr. Grunsfeld will discuss the effects of space weather on NASA operations.

Mr. John Kappenman, Manager, Applied Power Systems, Metatech Corporation, Duluth, Minnesota. Mr. Kappenman will discuss the effects of space weather events on electric power grid systems and how the loss of NOAA's SEC would affect this industry. Mr. Kappenman was formerly with Minnesota Power.

Captain Hank Krakowski, Vice President of Corporate Safety, Quality Assurance, and Security, United Airlines, Chicago, Illinois. Captain Krakowski will discuss how space weather events affect the airline industry, including air traffic control communications and human health concerns. He also will discuss how the loss of NOAA's SEC would affect United Airlines operations.

Dr. Robert Hedinger, Executive Vice President, Loral Skynet, Bedminster, New Jersey. Dr. Hedinger will explain the implications of space weather events for communications satellites and how the loss of NOAA's SEC would affect the commercial satellite sector.

Background

What Is Space Weather?

Space weather refers to conditions on the sun and in the solar wind, which can cause disturbances in the outer layers of the Earth's atmosphere. Highly energized particles from the sun disrupt the upper layers of the Earth's atmosphere, causing geomagnetic storms that result in increased radiation and rapid changes in the direction and intensity of the Earth's magnetic field. These conditions can influence the performance and reliability of space-borne and ground-based technological systems and can endanger human life or health. Government and private sector organizations concerned with communications, satellite operations, electric power grids, human space flight, and navigation use space weather information.

History of NOAA's Space Environment Center

NOAA's Space Environment Center (SEC), located in Boulder, Colorado, began in the 1940's as a program to study short-wave radio propagation at the National Bureau of Standards (now known as the National Institute of Standards and Technology, or NIST). As the SEC expanded its scope to study the effects of solar weather on the Earth's atmosphere, the center moved into the Office of Oceanic and Atmospheric Research in NOAA, where it is currently located. The SEC consists of three divisions: research and development, space weather operations, and systems. The SEC has 54 NOAA staff and two Air Force liaisons in its Boulder office. In a 2002 report, the National Academy Sciences, called the work of the SEC "crucial."

NOAA's SEC collects, provides, and archives space environment data from its polar-orbiting and geostationary satellites, from other federal agencies, and through international data exchange. Forecasters at SEC provide space weather forecasts and warnings to users in government and industry and to the general public, while the Air Force and private sector users take these forecasts and tailor them for their organizations' specific needs. SEC's space weather operations division is the national and international warning center for disturbances in the space environment that can affect people and equipment. The effects of these disturbances are described in more detail below. The research and development division is home to the leading experts in space weather. They conduct research in solar-terrestrial physics, develop techniques for forecasting solar and geophysical disturbances, provide real-time monitoring and forecasting of solar and geophysical events, and prepare data to be archived by NOAA's National Geophysical Data Center.

Air Force Space Forecast Center

NOAA's SEC works closely with the U.S. Air Force's Space Forecast Center at Offutt Air Force Base in Nebraska, which provides space weather forecast services to U.S. military customers. The total budget for Air Force space weather efforts was $15.3 million in FY 2003. The Air Force provides two personnel who work at the SEC to ensure that this vital space weather information is fed smoothly to the Air Force, which then tailors it for military purposes. For example, NOAA's SEC may issue a warning that a geomagnetic storm will occur in the Earth's atmosphere at a certain time. The Air Force will use this information to make recommendations about military satellites that should be turned or powered down, or military operations that should be suspended until the storm passes.

NASA Operations

NASA requires information about space weather to make decisions regarding the space shuttle and International Space Station (ISS) operations. For example, astronauts conducting space walks could be killed if they were exposed to high levels of radiation. Additionally, astronauts inside the ISS may have to take special precautions during a solar storm. In fulfilling its research mission, NASA flies many of the sensors used to collect space weather data on its research satellites. National Space Weather Program (NSWP)

Previous reviews of the space weather program have concluded that NOAA should continue to run the civilian space weather forecasting operation.

For example, in 1997, an interagency working group developed "The National Space Weather Program Implementation Plan," under which NOAA was to continue to run civilian space weather programs and the Air Force was to continue to run such programs for the military. The interagency group included NOAA, the National Science Foundation, the Department of Defense, NASA, the Department of Energy, the Department of the Interior, and the Department of Transportation.

Similarly, in its 2002 report, "The Sun to the Earth—and Beyond:

A Decadal Research Strategy in Solar and Space Physics," the National Academy of Sciences recommended that NOAA not only continue to forecast space weather but that NOAA should do more to coordinate the development of the sensors that are used to make its forecasts. Specifically, the Academy recommended that NOAA and NASA initiate a plan to transition solar monitoring sensors from their current location primarily on research satellites to operational satellite programs.

The SEC Budget Situation

The Space Environment Center is funded through NOAA's Office of Oceanic and Atmospheric Research (OAR). In FY 2003, the SEC received $5.2 million (a reduction of $2 million below FY 2002 levels). For FY 2004, the Administration requested $8 million for NOAA's SEC. At this time, the FY 2004 appropriations process is ongoing in Congress. The House Commerce, Justice, State (CJS) bill, passed in July, provides $5.2 million for the SEC (same level as FY 2003). The Senate CJS bill, reported out by the full committee, recommends no funding for SEC and suggests that the Air Force or NASA should assume the responsibility of forecasting space weather. Funding for some of the sensors and satellites that provide data to the SEC is already provided by other agencies, such as NASA and the Air Force, but NOAA's SEC is the national center for data collection and forecasting of space weather events.

<GRAPHIC(S) NOT AVAILABLE IN TIFF FORMAT>

Why Do We Need Space Weather Forecasts From NOAA's SEC?

Electric Power Grids

The first recorded evidence of space weather effects on technology was in 1859, when a major failure of telegraph systems in New England and Europe coincided with a large solar flare. More recently, on March 13, 1989, geomagnetically induced currents in Canadian transmission lines set off a cascade of broken circuits,

causing loss of power for the entire Hydro-Quebec power grid. The blackout affected six million customers and cost Hydro-Quebec more than $10 million.

In 1998, a similar geomagnetic storm was headed for Earth. This time, thanks to data from new sensors and improved forecast models, NOAA's SEC forecasters were able to alert electric power customers 40 minutes before the storm hit the Earth. In response, electric power utilities diverted power and increased safety margins on certain parts of the grid to avoid stress on the power system.

Satellite Operations

In addition to electric power grid operations, human activities dependent on satellites are affected by space weather. This includes everything from communications to satellite-television. Research done at NOAA's SEC has helped provide the government and other satellite operators with data on storms to help understand whether a failed satellite was due to mechanical problems or space weather. Additionally, the satellite industry uses space weather forecasts to determine the timing of rocket launches to avoid sending a multi-million dollar satellite into orbit at the peak of a solar storm.

Communications Satellites

Solar storms cause disturbances in the Earth's ionosphere that can affect the orbital path of low-orbit spacecraft, creating operational and tracking problems and sometimes shortening the useful life of a satellite. For example, in May 1998 loss of telephone pager service to 45 million customers was caused by a solar storm. During the Gulf War in 1991 military forces reported high frequency radio communications interruptions due to ionization storms, and in January 1994 an extended period of high electron levels caused failure of two Canadian communications satellites, which interrupted telephone, television, and radio service for several hours.

Airline Industry

Airlines are concerned about space weather because it can disrupt satellite and ground-based communication systems, which allow air traffic controllers to talk directly to pilots. Federal regulations require airlines to maintain communication capability with their aircraft at all times. Additionally, navigation systems can be affected by space weather events. Finally, because of the curvature of the Earth, planes flying from North America to Asia generally make flights over the North Pole, where passengers can be susceptible to higher doses of solar radiation than traditional non-polar flights. United Airlines reports that for the 21-month period from January 2002 through September 2003 there were approximately 140 flights that were or could have been affected by space weather events.

Questions for Witnesses

Dr. Ernest Hildner, Director, Space Environment Center, National Oceanic and Atmospheric Administration (NOAA)

1. Please provide an overview of NOAA's Space Environment Center (SEC). What research programs are performed at the center? What operational services are provided by the center?

2. Please describe the different types of solar weather events and specifically explain the time it takes for them to travel to the Earth. What is the lead-time we currently

have for reacting to or mitigating the effects of solar weather? Please provide historical examples of when space weather events have affected human activities.

3. Who are the users of SEC products and information?

4. Please describe the relationship between the SEC, NASA, and the Air Force Weather Agency, including a specific explanation of the role of each agency in understanding and predicting space weather.

5. If the FY04 final appropriation for the SEC was the $5.2 million recommended in the House bill, what would be the impact on SEC services?

Col. Charles L. Benson, Jr., Commander, Air Force Weather Agency

1. Please provide an overview of the Air Force Space Weather Services provided through the Air Force Weather Agency.

2. Please describe the relationship between NOAA's Space Environment Center (SEC), NASA, and the Air Force Weather Agency, including a specific explanation of the role of each agency in understanding and predicting space weather.

3. Who are the users of Air Force space weather products and information?

4. Are there any technical barriers to the Air Force Weather Agency taking on the duties of the SEC if it were no longer funded through NOAA? Given that the Air Force's capabilities are designed for military purposes, how would you have to adapt your practices to provide SEC-like services to the civilian sector?

5. What would be the impacts on the Air Force and overall military operations if SEC no longer existed? Please provide specific examples when possible.

Dr. John M. Grunsfeld, Chief Scientist, National Aeronautics and Space Administration (NASA)

1. Please provide an overview of how space weather can affect NASA operations, including examples of historical events that have caused problems.

2. How does NASA use data and products from NOAA's Space Environment Center (SEC)? In general, how much lead time do you need to make decisions for mitigating the effects of space weather?

3. How would you compare our knowledge today of the impacts of space weather on NASA operations to what we knew five years ago, and to what we expect to know five years from now?

4. What would be the impact to NASA if SEC were no longer able to provide its space weather forecasts to you? Please provide specific examples when possible.

5. Are there any technical barriers to NASA taking on the duties of the SEC if it were no longer funded through NOAA? Given that NASA's mission is research oriented, how would you have to adapt your practices to provide SEC operational services?

Mr. John Kappenman, Manager, Applied Power Systems, Metatech Corporation

1. Please provide an overview of how space weather can affect electric power grid systems, including examples of historical events that have caused problems.

2. How does your organization use data and products from NOAA's Space Environment Center (SEC)? In general, how much lead time do you need to make decisions for mitigating the effects of space weather?

3. How would you compare our knowledge today of the impacts of space weather on electric power grid systems to what we knew five years ago, and to what we expect to know five years from now?

4. What would be the impact to your organization and the electric power grid industry if SEC were no longer able to provide its space weather forecasts to you? Please provide specific examples when possible.

Captain Hank Krakowski, Vice President of Corporate Safety, Quality Assurance and Security, United Airlines

1. Please provide an overview of how space weather can affect airline operations, including examples of historical events that have caused problems.

2. How does your organization use data and products from NOAA's Space Environment Center (SEC)? In general, how much lead time do you need to make decisions for mitigating the effects of space weather?

3. How would you compare our knowledge today of the impacts of space weather on airline operations to what we knew five years ago, and to what we expect to know five years from now?

4. What would be the impact to your organization if SEC were no longer able to provide its space weather forecasts? Please provide specific examples when possible.

Dr. Robert Hedinger, Executive Vice President, Loral Skynet

1. Please provide an overview of how space weather can affect satellite operations, including examples of historical events that have caused problems.

2. How does your organization use data and products from NOAA's Space Environment Center (SEC)? In general, how much lead time do you need to make decisions for mitigating the effects of space weather?

3. How would you compare our knowledge today of the impacts of space weather on satellite operations to what we knew five years ago, and to what we expect to know five years from now?

4. What would be the impact to your organization if SEC were no longer able to provide its space weather forecasts? Please provide specific examples when possible.

Chairman Ehlers. This hearing will come to order. Good morning. Welcome to the oversight hearing entitled: "What Is Space Weather and Who Should Forecast It?" And if you don't know what it is, you can go out and look outside and you will get some idea of what space weather is. Well, I wanted to make it clear, since I have been asked this, that the solar storm that is currently underway did not start the fires in California.

As a physicist, I must admit that when we began to plan for this hearing last month, I did not think it would conjure much attention outside of the scientific community. However, thanks to Divine Intervention, we now have major solar storm activity to coincide with the hearing. We certainly hope that the lights will stay on and our webcast capabilities will not be diminished during the course of this hearing.

The purpose of the hearing is to examine the National Oceanic and Atmospheric Administration's, better known as NOAA, Space Environment Center. This center, abbreviated SEC, but not to be confused with buying and selling stocks, provides real-time monitoring and forecasting of solar storms. The SEC is located with other NOAA labs in Boulder, Colorado in the District of Mr. Udall, the Subcommittee Ranking Member sitting directly to my right.

Many of us may think of solar eruptions as a curiosity or as the source of the beautiful Aurora Borealis often observed by residents in the northern U.S. However, as highlighted by recent media attention, these solar events can have serious repercussions for Earth-based technological systems. They cause geomagnetic storms in the Earth's atmosphere that can disrupt communication systems, cause surges on electric power grids, and be harmful to airline passengers and astronauts. NOAA's SEC provides vital space weather forecasts for civilian industries concerned with these effects. Additionally, SEC forecasts are used by the Air Force to provide tailored recommendations for military users concerned with space weather. For example, I believe the current space storm was predicted a good two days before it began.

Despite its important role in protecting the Nation's technological systems from geomagnetic storms, some here in Congress have proposed to reduce or eliminate funding for NOAA's SEC. In the House fiscal year 2004 appropriations bill for NOAA, SEC funding levels are 35 percent below the Administration's request of $8 million. Of even greater concern, the Senate Appropriations Committee bill contains no funding for SEC and includes the suggestion, without any justification, that the Air Force or the National Aeronautics and Space Administration, better known as NASA, should take on the duties of predicting space weather.

Today, we will hear from representatives of NOAA, the Air Force, and NASA about the roles of each agency in monitoring and forecasting space weather. Then we will hear from representatives of three industries that rely on SEC forecasts: the electric power grid industry, the airline industry, and the communications satellite industry. These experts will help us to better understand the impact of space weather on the Earth and its surroundings and to examine the question of who should be responsible for forecasting it.

Before we hear from our Ranking Member and our witnesses, I wanted to show a short movie clip of the most recent solar flare to set the mood for today's hearing. So we will now show that. I am not quite sure how that is going to show up in the transcript of the hearing, but we will take a quick look.

[Video]

Chairman Ehlers. Thank you very much. If I might mention yesterday, just out of curiosity, I went to the site, the solar site, and looked at one of the images. I took my little ruler and measured the diameter of the sun and the size of the flare compared to the sun. Then did a quick mental calculation. I can't guarantee this is

Michelle, Kayce (UTC)

From: repar [[redacted]@saw.net]
Sent: Friday, August 27, 2010 4:50 PM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge-DEIS-Avians-Repar-8
Attachments: Comments_MBTA_27Aug2010.doc

Importance: High

Dear EFSEC,
Attached, please find my last entry for comments on the Whistling Ridge DEIS. Thank you for this opportunity to comment. I learned a lot and I know there is a lot to still learn! Have a wonderful weekend./Mary

Mary J. Repar
[redacted]E. Loop Rd. [redacted]
Stevenson, WA 98648
Tel: 509.427.[redacted]
E-mail: [redacted]@saw.net
"Life is not measured by the number of breaths we take but by the moments that take our breath away."

Mary J. Repar
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27 August 2010

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Re: Comments on the Whistling Ridge DEIS and the inadequacy of information on the cumulative effects of wind farm development on avian species and possible and probable violations of the Migratory Bird Treaty Act of 1918 (MBTA)

Dear EFSEC and BPA,

I voiced some concerns about birds and bats in my previous comments on Chapter 3 and cumulative effects, but I wanted to voice even more concern and trepidation about the cumulative effects and impacts that regional wind farms, and BPA energy production facilities en toto, have on migratory species. The Migratory Bird Treaty Act, see Reference #1, below, is mentioned in the DEIS but I am very concerned that the topic of migrating avian species should have more in-depth and thorough regional data presented in the DEIS. As I have stated before, cumulative impacts, both direct and indirect, are not done on a project by project basis, but, according to NEPA regulations, must be done on a reference geographical and/or regional basis. This was not done by either SDS or BPA, the two proponents for this wind farm project.

Briefly, some of my concerns:

- Cumulative effects and impacts on species viability are not adequately addressed in the DEIS—there is no supporting data to show if avian species birth rates, replacement rates, genetic diversity, etc., would or would not be affected by regional wind farms. This must be addressed;
- Will there be "taking" by the wind turbines? How will "taking," basically killing of an avian, be addressed? What type of monitoring will be done throughout the life of the project to collect data on "taking"?
- Where are the migratory bird maps for the region? I did not find them in the DEIS.

- Are there other species, besides avian, that migrate through the area and might be affected by the regional wind farms and BPA's energy generation infrastructure? Apparently, the MBTA was amended to include other species: "The 1974 statute (P.L. 93-300) amended the MBTA to include the provisions of the 1972 Convention between the U.S. and Japan for the Protection of Migratory Birds and Birds in Danger of Extinction. This law also amended the title of the MBTA to read: **"An Act to give effect to the conventions between the U.S. and other nations for the protection of migratory birds, birds in danger of extinction, game mammals, and their environment."**

I'm sure that I have many more questions, but the 5 p.m. deadline is upon me and I want to make sure that I get these comments in on time. I do think that the Whistling Ridge DEIS is extremely deficient in data on migration pathways for avian species. This lack of regional data must be addressed or the DEIS is incomplete. It is an established fact that wind farms kill birds. How many is hotly debated. However, that does not mean that we should not attempt to gather data so that we can better understand the regional cumulative impacts and effects of wind farms and energy production infrastructures on avian species, and, of course, on other species.

Thank you.

Sincerely,

/e-signature/Mary J. Repar
27 August 2010

Reference #1

http://www.fws.gov/laws/lawsdigest/migtrea.html

Migratory Bird Treaty Act of 1918

Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755) as amended by: Chapter 634; June 20, 1936; 49 Stat. 1556; P.L. 86-732; September 8, 1960; 74 Stat. 866; P.L. 90-578; October 17, 1968; 82 Stat. 1118; P.L. 91-135; December 5, 1969; 83 Stat. 282; P.L. 93-300; June 1, 1974; 88 Stat. 190; P.L. 95-616; November 8, 1978; 92 Stat. 3111; P.L. 99-645; November 10, 1986; 100 Stat. 3590 and P.L. 105-312; October 30, 1998; 112 Stat. 2956

The original 1918 statute implemented the 1916 Convention between the U.S. and Great Britain (for Canada) for the protection of migratory birds. Later amendments implemented treaties between the U.S. and Mexico, the U.S. and Japan, and the U.S. and the Soviet Union (now Russia).

Specific provisions in the statute include:
Establishment of a Federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird." (16 U.S.C. 703)

This prohibition applies to birds included in the respective international conventions between the U.S. and Great Britain, the U.S. and Mexico, the U.S. and Japan, and the U.S. and the Russia.

Authority for the Secretary of the Interior to determine, periodically, when, consistent with the Conventions, "hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any . . .bird, or any part, nest or egg" could be undertaken and to adopt regulations for this purpose. These determinations are to be made based on "due regard to the zones of temperature and to the distribution, abundance, economic value, breeding habits, and times of migratory flight." (16 U.S.C. 704)

A decree that domestic interstate and international transportation of migratory birds which are taken in violation of this law is unlawful, as well as importation of any migratory birds which are taken in violation of Canadian laws. (16 U.S.C. 705)

Authority for Interior officials to enforce the provisions of this law, including seizure of birds illegally taken which can be forfeited to the U.S. and disposed of as directed by the courts. (16 U.S.C. 706) Establishment of fines for violation of this law, including misdemeanor charges. (16 U.S.C. 707)

Authority for States to enact and implement laws or regulations to allow for greater protection of migratory birds, provided that such laws are consistent with the respective Conventions and that open seasons do not extend beyond those established at the national level. (16 U.S.C. 708)

A repeal of all laws inconsistent with the provisions of this Act. (16 U.S.C. 710)
Authority for the continued breeding and sale of migratory game birds on farms and preserves for the purpose of increasing the food supply. (16 U.S.C. 711)

The 1936 statute implemented the Convention between the U.S. and Mexico for the Protection of Migratory Birds and Game Mammals. Migratory bird import and export restrictions between Mexico and the U.S. were also authorized, and in issuing any regulations to implement this section, the Secretary of Agriculture was required to consider U.S. laws forbidding importation of certain mammals injurious to agricultural and horticultural interests. Monies for the Secretary of Agriculture to implement these provisions were also authorized.

The 1960 statute (P.L. 86-732) amended the MBTA by altering earlier penalty provisions. The new provisions stipulated that violations of this Act would constitute a misdemeanor and conviction would result in a fine of not more than $500 or imprisonment of not more than six months. Activities aimed at selling migratory birds in violation of this law would be subject to fine of not more than $2000 and imprisonment could not exceed two years. Guilty offenses would constitute a felony. Equipment used for sale purchases was authorized to be seized and held, by the Secretary of the Interior, pending prosecution, and, upon conviction, be treated as a penalty.

Section 10 of the 1969 amendments to the Lacey Act (P.L. 91-135) repealed the provisions of the MBTA prohibiting the shipment of wild game mammals or parts to and from the U.S. or Mexico unless permitted by the Secretary of the Interior. The definition of "wildlife" under these amendments does not include migratory birds, however, which are protected under the MBTA.

The 1974 statute (P.L. 93-300) amended the MBTA to include the provisions of the 1972 Convention between the U.S. and Japan for the Protection of Migratory Birds and Birds in Danger of Extinction. This law also amended the title of the MBTA to read: "An Act to give effect to the conventions between the U.S. and other nations for the protection of migratory birds, birds in danger of extinction, game mammals, and their environment." Section 3(h) of the Fish and Wildlife Improvement Act of 1978 (P.L. 95-616) amended the MBTA to authorize forfeiture to the U.S. of birds and their parts illegally taken, for disposal by the Secretary of the Interior as he deems appropriate. These amendments also authorized the Secretary to issue regulations to permit Alaskan natives to take migratory birds for their subsistence needs during established seasons. The Secretary was required to consider the related migratory bird conventions with Great Britain, Mexico, Japan, and the Soviet Union in establishing these regulations and to establish seasons to provide for the preservation and maintenance of migratory bird stocks.

Public Law 95-616 also ratified a treaty with the Soviet Union specifying that both nations will take measures to protect identified ecosystems of special importance to migratory birds against pollution, detrimental alterations, and other environmental degradations. (See entry for the Convention Between the United States of America and the Union of Soviet Socialist Republics Concerning the Conservation of Migratory Birds and Their Environment; T.I.A.S. 9073; signed on November 19, 1976, and approved by the Senate on July 12, 1978; 92 Stat. 3110.)

Public Law 99-645, the 1986 Emergency Wetlands Resources Act, amended the Act to require that felony violations under the MBTA must be "knowingly" committed. P.L. 105-312, Migratory Bird Treaty Reform Act of 1998, amended the law to make it unlawful to take migratory game birds by the aid of bait if the person knows or reasonably should know that the area is baited. This provision eliminates the "strict liability" standard that was used to enforce Federal baiting regulations and replaces it with a "know or should have known" standard. These amendments also make it unlawful to place or direct the placement of bait on or adjacent to an area for the purpose of taking or attempting to take migratory game birds, and makes these violations punishable under title 18 United States Code, (with fines up to $100,000 for individuals and $200,000 for organizations), imprisonment for not more than 1 year, or both. The new amendments require the Secretary of Interior to submit to the Senate Committee on Environment and Public Works and the House Committee on Resources a report analyzing the effect of these amendments and the practice of baiting on migratory bird conservation and law enforcement. The report to Congress is due no later than five years after enactment of the new law.

P.L. 105-312 also amends the law to allow the fine for misdemeanor convictions under the Migratory Bird Treaty Act to be up to $15,000 rather than $5000.

Michelle, Kayce (UTC)

From: Nathan Baker [redacted]@gorgefriends.org]
Sent: Friday, August 27, 2010 4:53 PM
To: Andrew M. Montaño; Posner, Stephen (UTC)
Cc: EFSEC (UTC)
Subject: Whistling Ridge DEIS Comments
Attachments: Comments of Friends of the Columbia Gorge on the Whistling Ridge DEIS.pdf

Dear Messrs. Montaño and Posner:

Please find attached the comments of Friends of the Columbia Gorge on the DEIS for the Whistling Ridge Energy Project. If possible, we request that the BPA post our comments on its web site.

We also have multiple exhibits. I will send as many of these as I can by email, and will also mail all exhibits (including the large ones) on CDs to each of you. I recently checked with Maryam Ashgharian at the BPA and she said this method would be acceptable, given the limitations of the BPA electronic comment form in accepting large files.

Thank you very much for your consideration. If you have any questions or comments, please do not hesitate to contact me.

Nathan Baker, Staff Attorney
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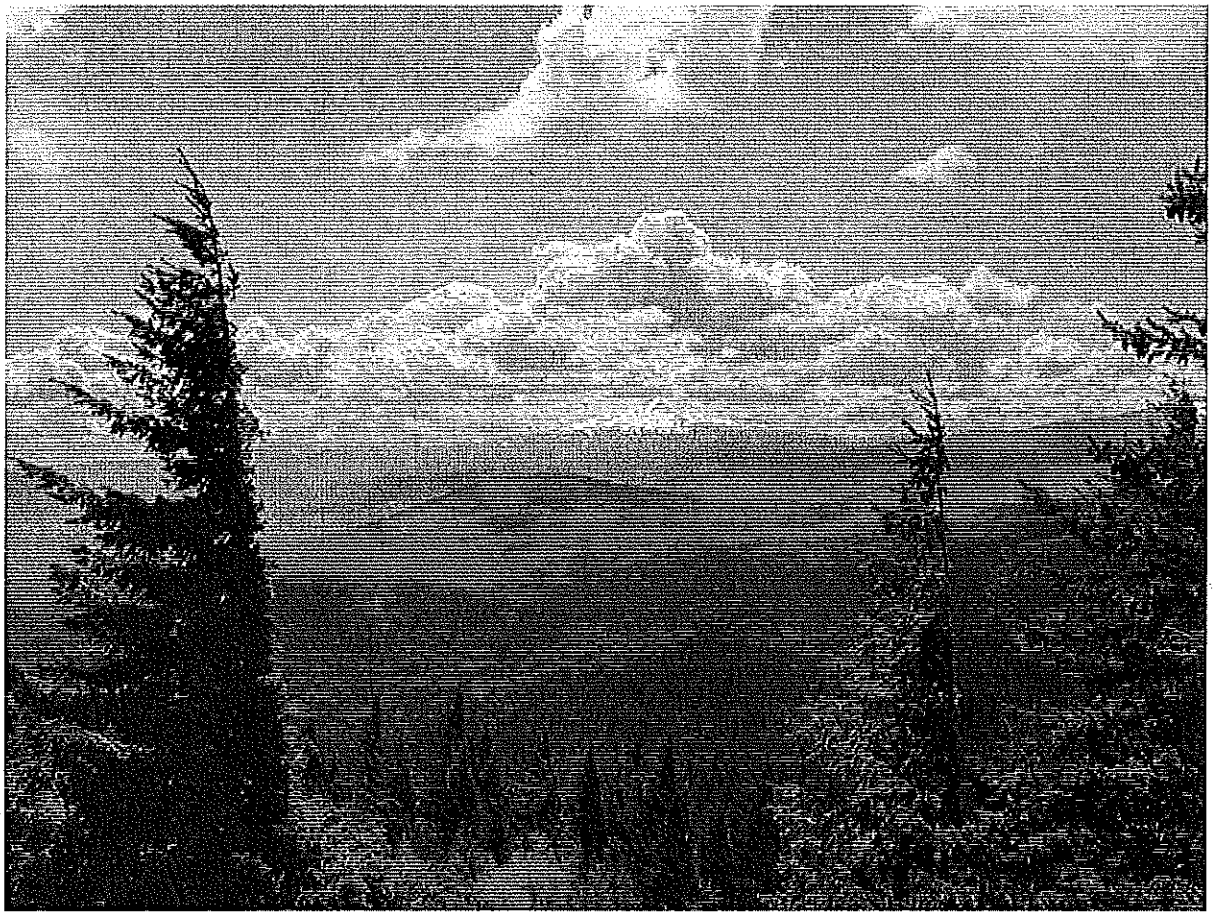
Comments on the Draft Environmental Impact Statement for the Whistling Ridge Energy Project DOE/EIS – 0419



Submitted by

Friends of the Columbia Gorge

August 27, 2010

Cover photo © Chris Carvalho, www.lensjoy.com
Natural scenic views in the Columbia River Gorge, including this view of Mt. Hood from Nestor Peak, would be permanently damaged by the Whistling Ridge Energy Project.

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INTRODUCTION

These comments regarding the Draft Environmental Impact Statement for the Whistling Ridge Energy Project are submitted by Friends of the Columbia Gorge.[1] Friends is a nonprofit organization with approximately 4,700 members dedicated to protecting and enhancing the resources of the Columbia River Gorge.

Of all the wind energy projects that EFSEC and BPA have reviewed to date, the Whistling Ridge Energy Project is easily the most controversial and problematic, as well as the project most likely to cause significant environmental impacts. This is the only project proposed to be located within forested habitat. This is the only project proposed within a designated Special Emphasis Area for the federally listed Northern Spotted Owl. This is the only project proposed within three miles of the Lewis and Clark National Historic Trail, the Oregon Pioneer National Historic Trail, the Historic Columbia River Highway (designated as a National Historic District on the National Register of Historic Places, as well as a National Historic Landmark), and the Ice Age Floods National Geological Trail. This is the only project for which multiple other agencies, including the United States Forest Service and the National Park Service, have recommended substantial modifications to the project. This is the only project proposed adjacent to a National Forest. This is the only project that would cause significant adverse impacts in two states (not just Washington). This is the only proposed project surrounded by recreational and cultural resources. And last but certainly not least, this is the only proposed project that would cause significant adverse impacts to a National Scenic Area.

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[1] Friends hereby incorporates by reference all of its previous written and oral comments to the agencies, as well as its submissions to EFSEC through that agency's adjudicative proceeding and land use consistency process. The DEIS does not adequately address many of Friends' previous comments. Friends also incorporates all comments of Save Our Scenic Area.

Because of these unique factors, the agencies must take a special, close look at the impacts. Unfortunately, this Draft Environmental Impact Statement fails to take the hard look required by NEPA and SEPA. The DEIS is fundamentally flawed because it improperly narrows the scope of study, ignores and trivializes the impacts of the project, ignores or summarily dismisses detailed comments from the public and expert agencies, and was largely drafted and/or influenced by the applicant and the applicant's consultants behind closed doors and is therefore extremely biased in favor of the project. The DEIS is so deficient that it cannot be used as the basis for a decision on the project. The proposed project should be denied outright, but if it is to be given further consideration, a supplemental or revised DEIS is required.

BACKGROUND

I. The Columbia River Gorge and the Affected Communities

The Whistling Ridge project would be sited in the heart of the Columbia River Gorge. Many of the proposed turbines would be sited immediately adjacent to and/or highly visible from the Columbia River Gorge National Scenic Area. In addition, portions of the proposed "haul route," along which construction materials and turbine components would be transported, are located within the National Scenic Area.

Established by Congress in 1986, the National Scenic Area is an extraordinary national treasure, an area protected under federal law for its aesthetic, biological, ecological, historic, and recreational values. *See* Columbia River Gorge National Scenic Area Act ("Scenic Area Act"), 16 U.S.C. §§ 544–544p.

The Gorge, under the protection of the Scenic Area Act, offers unfettered scenic and historic views along the Columbia River, site of the final portion of Lewis and Clark's journey across the West. Additionally, the Gorge offers unique recreational opportunities with its many

side-river canyons, ridgetops, and the Columbia River itself. Hiking, bicycling, river rafting, kayaking, skiing, boating, fishing, camping, kiteboarding, windsurfing, birdwatching, and wildflower viewing are all pursued actively by the public throughout the Gorge. The overall character of the surrounding region highly scenic, ranging from wilderness to rural areas with quaint towns and spectacular vistas, rather than industrial or commercial.

In its November/December 2009 issue, *National Geographic Traveler* ranked the Columbia Gorge region #6 internationally, and second in the nation, among "iconic destinations." The Gorge was ranked higher than all of the county's national parks that were surveyed, and higher than Tuscany, Italy; the Serengeti Plains; and Mount Kilimanjaro. A primary reason given by *National Geographic* for the Gorge's high ranking was the Gorge's international reputation for "an incredible job of protecting the views." Another stated reason was the Gorge's "[g]reat potential for 'agritourism and geotourism.'"

The Gorge has long been considered a special area. In 1915, the U.S. Forest Service ("USFS" or "Forest Service") established Eagle Creek as the first Forest Service Recreation Area in the nation. The following year, the Gorge was proposed as a National Park. Continuing development pressures led to the establishment of the National Scenic Area in 1986. Today the Gorge contains hundreds of miles of hiking and bike trails through locales as diverse as misty river canyons and arid grassland plateaus. The Gorge also contains dozens of lakes, parks, campgrounds, and other recreational areas.

The proposed energy project would be highly visible from several urban areas and unincorporated communities in or near the National Scenic Area. These include Underwood, Hood River, Mosier, Mill A, Willard, and White Salmon. Hundreds of residents of these and

other communities are strongly opposed to the project and have expressed their opposition and concerns in comments to the reviewing agencies and to Skamania County.

II. The National Environmental Policy Act

A major purpose of the National Environmental Policy Act ("NEPA") is to ensure that federal agencies conduct fully informed environmental decision-making. NEPA promotes its sweeping commitment to "prevent or eliminate damage to the environment and biosphere" by focusing the attention of federal decision makers and the public on the environmental and other impacts of proposed agency action. 42 U.S.C. § 4321. By focusing agency attention on the environmental and socioeconomic impacts of a proposed action, NEPA ensures that the agency will not act on incomplete information, only to regret its decision once finalized. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

To that end, "[t]he sweep of NEPA is extraordinarily broad, compelling consideration of any and all types of environmental impacts of federal action." *Calvert Cliffs' Coordinating Comm. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1122 (D.C. Cir. 1971). An agency must "take the initiative of considering environmental values at every distinctive and comprehensive stage of the process." *Id.* at 1111.

III. The State Environmental Policy Act

The Washington State Environmental Policy Act ("SEPA") applies to state and local governmental actions and decisions. SEPA's general purpose is to require consideration of environmental factors at the earliest possible stage in order to allow decisions to be based on a complete disclosure of environmental consequences. *See Stempel v. Dept. of Water Resources v. City of Kirkland*, 82 Wn. 2d. 109, 118 (1973). Agencies are required to engage in an open and public study of environmental impacts at the earliest possible time. RCW § 43.21C.030(b); *see*

also WAC § 197-11-300.

Agencies must assess the likely cumulative, direct, indirect, short-term, and long-term impacts to the environment. WAC 197-11-030(2)(b), (2)(g); *see also* State Environmental Policy Act Handbook (SEPA Handbook) at 2 (2003). Agencies must also evaluate alternatives and mitigation measures. WAC 197-11-055(2)(c); *see also* SEPA Handbook at 2. Agencies "shall not limit" consideration only to impacts within the boundaries of the agencies' jurisdiction. WAC 197-11-060(4).

For projects with likely significant impacts, environmental impact statements are required to ensure that government agencies and interested citizens have an opportunity to thoroughly review environmental impacts of proposed actions at the earliest possible stage; the agency must use the EIS in planning actions and making decisions. WAC 197-11-400(4). "The primary purpose of an environmental impact statement is to ensure that SEPA's policies are an integral part of the ongoing programs and actions of state and local government." WAC 197-11-400(1).

The EIS must be *impartial* and must inform decision makers of alternatives and mitigation measures that avoid or minimize impacts of a proposed action. WAC 197-11-400(2). The EIS must not merely rationalize a predetermined outcome. WAC 197-11-402(10). ("EISs shall serve as the means of assessing the environmental impact of proposed agency action, rather than justifying decisions already made.") Rather, the EIS must include sufficient objective analysis to actually inform the agency's decision making process.

The EIS must be completed early enough to serve as a practical contribution to the decision making process. WAC 197-11-406 ("The statement shall be prepared early enough so it can serve practically as an important contribution to the decision making process and will not be used to rationalize or justify decisions already made."); *see also King County v. Boundary*

Review Board, 122 Wn.2d 648, 666, 860 P.2d 1024 (1993); *Barrie v. Kitsap County*, 93 Wn.2d 843, 854, 613 P.2d 1148 (1980); *Mentor v. Kitsap County*, 22 Wn.App. 285, 291, 588 P.2d 1226 (1978).

For projects with potentially significant or serious impacts, SEPA requires the same hard look that NEPA does. "The level of detail shall be commensurate with the importance of the impact," and in the face of any scientific uncertainty, the EIS must disclose the uncertainty and analyze the worst case scenario and the likelihood of its occurrence. WAC 197-11-402(2) and 197-11-080(2), (3).

DISCUSSION

I. The DEIS is Improperly Designed so that the Applicant's Private Economic Interests Unlawfully Dictate the Purpose, Need, Alternatives, and Eventual Outcome for the Proposed Action.

A. The Purpose and Need Statement in the DEIS is Being Improperly Driven by the Applicant's Private Economic Interests.

NEPA requires federal agencies to "rigorously explore and objectively evaluate all reasonable alternatives" to a proposed action. 40 C.F.R. § 1502.14(a). In order to do so, the agency must first reasonably and objectively define the purpose and need of a proposed action. *See Simmons v. United States Army Corps of Eng'rs*, 120 F.3d 664, 666 (7th Cir. 1997) (citing *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195–96 (D.C. Cir. 1991)). The chosen statement of purpose and need effectively dictates the range of alternatives evaluate in an EIS. *Id.*

"[A]n agency cannot define its objectives in unreasonably narrow terms." *City of Carmel-By-The-Sea v. United States Dep't of Transp.*, 123 F. 3d 1142, 155 (9th Cir. 1997). "An agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative . . . would accomplish the goals of the agency's action, and the EIS would become a

foreordained formality. *Nat'l Parks & Conservation Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1070 (9th Cir. 2010). Moreover, an agency may not allow the economic needs and goals of a private applicant to define the purpose and need, and hence the inevitable outcome, of an EIS. *Id.*

Unfortunately, that is exactly what is happening with this EIS. The DEIS lists the applicant's "needs," including the "business needs of the applicant" (such as "diversifying the holdings" of the Applicant) as stated needs for the project, and lists no agency-defined objectives or needs other than complying with applicable laws. The DEIS fails to even acknowledge that the agencies have no obligation or responsibility whatsoever to meet the applicant's needs or desires. As a result, the Applicant-identified needs are defining and driving the characteristics of this project and the alternatives thereto. This approach is inappropriate and unlawful.

Interestingly, some of the Applicant-identified needs are suspect. For instance, the Applicant identifies a need for utilities in Washington State to provide more alternative energy to their customers. DEIS at 1-4–1-6. But nowhere has the Applicant specified or publicly committed to sell the electricity from this project within Washington State. As it stands, well over half of all the wind energy produced in Washington and Oregon is currently being sent to California. If a similar fate occurs with the electricity from the Whistling Ridge project, then the Washington state requirements for alternative energy are wholly irrelevant to the project. The applicant cannot have it both ways. It cannot assert that meeting Washington state renewable portfolio standards is a need for the project, and yet refuse to commit energy from this project to remain in Washington state.

The DEIS repeatedly states or implies that the project would reliably produce between 70 MW and 75 MW of energy. *See, e.g.*, DEIS at I-9, 3-90, 3-271. The DEIS significantly

overvalues the generating potential of the project. Wind energy facilities cannot continually generate energy at their rated capacity. Generally, wind energy facilities generate energy at 30% of capacity. So for this project, the actual energy output would be only 21 MW. Every assertion or implication in the DEIS that the Whistling Ridge project would produce 70 or 75 MW of energy must be corrected to reflect the likely actual production of the facility. This correction must also be reflected in the purported need to produce at least 70 MW of energy for the project to be marketable. In any event, the facility would likely deliver 21 MW of energy to the grid.

Further, the Applicant's purpose and need statement appears to be defined only in terms of conveying power from a wind energy generation facility. This purpose and need is too narrowly limited, and avoids the question of whether there truly is a need for a wind energy project. As a result, the purpose and need statement improperly limits the alternatives considered by the agencies.

As in the *National Parks & Conservation Association* case, the private economic interests of the Applicant are the driving force behind the purpose and need statement, and thus behind the entire DEIS. The narrowly drawn statement unreasonably constrains the possible range of alternatives, because it excludes alternatives that fail to meet the Applicant's specific private objectives, which are to build a wind energy project. The result of such a narrowly driven statement led to only two alternatives to be considered: the proposed action (authorizing construction and operation of the proposed Whistling Ridge Entergy Project and associated components) and the No Action Alternative (not authorizing construction and operation of the proposed project). This extremely narrow range of alternatives is unreasonable, and thus, violates NEPA.

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B. The Stated Purposes Fail to Acknowledge EFSEC's Duty to Protect State or Local Governmental or Community Interests.

One of EFSEC's mandates is to "protect state or local governmental or community interests affected by the construction or operation of the energy facility." WAC 463-64-020. Any site certification agreement must contain conditions to meet this mandate. *Id.*

The DEIS fails to even mention this mandate, let alone apply it. This mandate should be expressly included in the stated purpose and need for action on page 1-3 of the EIS, and should be applied and reflected throughout the DEIS.

C. The Range of Alternatives Considered is Inadequate.

The DEIS discusses only the Proposed Action Alternative (the proposed project) and the No Action Alternative. Such a truncated alternatives analysis violates the agencies' duties under NEPA and SEPA to fully review all reasonable alternatives.

"The purpose of NEPA is to require disclosure of relevant environmental considerations that were given a 'hard look' by the agency, and thereby to permit informed public comment on proposed action and any choices or alternatives that might be pursued with less environmental harm." *Te-Moak Tribe of Western Shoshone of Nevada v. United States Dep't of the Interior*, --- F.3d ---, 2010 WL 2431001 (9th Cir. 2010) (quoting *Lands Council v. Powell,* 395 F.3d 1019, 1027 (9th Cir.2005)); *see also* 42 U.S.C. § 4332(E) (requiring agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources"). Agencies are required to consider alternatives in an EIS and must give full and meaningful consideration to all reasonable alternatives. *Id.; see also* 40 C.F.R. § 1508.9(b). "The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." *Id.* (citing *Idaho Conservation League v. Mumma,* 956 F.2d 1508, 1519 (9th Cir.1992) (quoting *Citizens for*

a Better Henderson v. Hodel, 768 F.2d 1051, 1057 (9th Cir.1985)).

SEPA also requires an EIS to evaluate alternatives. RCW 43.21C.030(2)(c)(i). The applicable guidelines are found at WAC 197-11-440(5). An alternative considered for purposes of an EIS need not be certain or uncontested, it must only be reasonable. *King County v. Central Puget Sound Growth Management Hearings Bd.* 138 Wn.2d 161, 184-85, 979 P.2d 374, 385 (1999). A reasonable alternative is one that could feasibly attain or approximate a proposal's objectives at a lower cost to the environment. *Id.; see also* WAC 197-11-440(5)(b).

According to the applicable federal regulations, an EIS "shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. CEQ clarified the meaning of this requirement in its "Forty Most Asked Questions" policy guidance by defining "reasonable alternatives" as including "those that are *practical or feasible* from the technical and economic standpoint and using common sense, rather than simply *desirable* from the standpoint of the applicant." Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026 (Mar. 23, 1981) (emphasis in original).

When selecting alternatives, an agency may *consider* an applicant's desires, but is not by any means bound or limited by them. It is not appropriate for an agency to rely on the "self-serving statements of the project applicants." *Southern Utah Wilderness Alliance v. Norton,* 237 F. Supp. 2d 48, 53 (D.D.C. 2002). Instead, the action agency must "to the fullest extent possible . . . study, develop and describe appropriate alternatives to recommended courses of action in any proposal which includes unresolved conflicts concerning alternative uses of available resources." *Id.* at 54 (citing 42 U.S.C. § 4332(2)(E)). Moreover, "[o]ther factors [other than the applicant's desires] to be developed during the scoping process—comments received from the public, other

government agencies and institutions, and development of the agency's own environmental data—should certainly be incorporated into the decision of which alternatives to seriously evaluate in the EIS." CEQ, Guidance Regarding NEPA Regulations, 48 Fed. Reg. 34,263, 34,267 (July 28, 1983).

Again, the DEIS analyzes the impacts of only two alternatives: 1) the proposed project, and 2) the no action alternative. These options advance the Applicant's goals, rather than the agencies' goals, to the exclusion of other reasonable alternatives. The DEIS is fatally flawed in its failure to consider an adequate range of reasonable alternatives. *See Muckleshoot Indian Tribe v. USFS,* 177 F.3d 800, 913 (9th Cir. 1999) (agency failed to consider an adequate range of alternatives when an EIS considered only a no action alternative along with two "virtually identical" action alternatives).

Various other alternatives should have been considered. First, at page 1-13 of the DEIS, the BPA did not consider any alternate locations for the wind turbine project other than those owned by the Applicant. Likewise, alternatives for interconnecting the wind project with transmission lines off of the project site were eliminated.

Indeed, under NEPA, the EIS may even have to look at alternatives over which the applicant has no control. *NRDC v. Morton,* 458 F.2d 827, 835 (D.C. Cir. 1972); *NWF v. NMFS,* 235 F. Supp.2d 1143 (W.D. Wash. 2002). Further, it is irrelevant whether an applicant already owns alternative sites for the purposes of NEPA review: "The fact that this applicant does not now own an alternative site is only marginally relevant (if it is relevant at all) to whether feasible alternatives exist to the applicant's proposal." *Van Abbema v. Fornell,* 807 F.2d 633, 638 (7th Cir. 1986).

As stated in the *Van Abbema* case, other alternatives for a project cannot be eliminated as non-feasible simply because the Applicant does not now own the site where an alternative location may exist. Here, SDS and Broughton Lumber own tens of thousands of acres of land in Oregon and Washington that could potentially be available for energy production purposes. The EIS fails to consider those lands, and fails to consider the possibility of applicant purchasing lands in other locations, such as east of the National Scenic Area, for an energy facility.

Similarly, SEPA also requires a discussion of alternate development sites for a proposed project in order to have an adequate discussion of reasonable alternatives. *See Barrie v. Kitsap County*, 93 Wn.2d 843, 855, 613 P.2d 11481155 (1980) (EIS was inadequate because it looked only at the use of the applicant's private property for siting a shopping center, and failed to discuss alternative development sites).

Here, alternate locations could provide comparable energy output. This approach would be consistent with the BPA stated goals of acting consistently with its environmental and social responsibilities and providing for cost and administrative efficiency. Surely other sites with far less impacts could easily be located. Not far to the east of this project site, thousands of wind turbines have been constructed recently, the vast majority of which pose far less resource impacts than the Whistling Ridge site.

Another potential site is immediately north of the proposed project site, on DNR lands. In fact, this property has been designated by WRE as "Phase 2" of the Whistling Ridge project. Although DNR has indefinitely placed on hold consideration of WRE's request for a wind power lease of this property, that does not mean use of the property is forever out of the question. In fact, recent emails by WRE representatives, obtained by Skamania County residents Keith Brown and Teresa Robbins in response to a public records request, indicate that WRE still

wishes to use the DNR property for wind energy. The DEIS fails to analyze the possibility of siting wind turbines on this property rather than on the SDS and Broughton Lumber land.

Second, the BPA did not consider alternate configurations (with fewer wind turbines and/or in different locations) for the project. On page 1-14, the DEIS states that "the project must be capable of producing a minimum of 70 MW" and that the project size "was selected to *optimize* . . . economic feasibility" (emphasis added). There are no financial data or projections provided to support this claim. Moreover, the agencies eliminated any alternatives that would have considered a smaller generation facility, for instance in order to address potential environmental impacts, solely in an effort to "optimize"[2] the applicant's economic wishes. Nor did the agency consider alternative locations for individual turbines that would reduce their impacts. This approach is unlawful and violates the agencies' legal mandates.

Third, the BPA did not consider other potential renewable energy sources in the DEIS. A dismissal of renewable energy sources other than wind energy, such as distributed generation, does not comport with the agencies' stated goal of acting consistently with their environmental and social responsibilities.

Fourth, no conservation alternatives were considered to eliminate the stated "need" for this 70 MW of installed capacity. Conservation alternatives, such as demand response technologies, also should have been included in order to meet the agencies' goals of promoting their environmental and social responsibilities.

Fifth, another reasonable alternative is one that analyzes and considers the future development of the proposal. WAC 197-11-440(5)(c) states that the EIS shall:

> (vii) Discuss the benefits and disadvantages of reserving for some future time the implementation of the proposal, as compared with possible approval at this time. The

[2] The *Webster's Dictionary* definition of "optimize" is "to make as effective, perfect, or useful as possible."

> agency perspective should be that each generation is, in effect, a trustee of the environment for succeeding generations. Particular attention should be given to the possibility of foreclosing future options by implementing the proposal.

The DEIS fails to comply with this requirement, because it fails to consider the possibility of delaying the development of wind energy until a later date, perhaps at a time when the energy grid will be more equipped to handle the addition of new wind energy sources.

The above alternatives were either eliminated from the study, or not considered at all, because the Applicant's economic needs, rather than the stated goals of the agencies, dictated the results of this DEIS. In effect, the agencies are violating their duties to consider all reasonable alternatives.

D. The Applicant and its Consultants Appear to Have Played an Improper Role in the Drafting of the DEIS, Leading to a Biased and Result-Oriented Document.

The agencies' ability to prepare an EIS that would provide a balanced and objective analysis, leading to a decision that addresses the interests of the general community and not just the Applicant, have become further compromised by an apparent decision to allow the same consultants who prepared the application on behalf of the Applicant to also prepare analytical content in the DEIS.[3]

Originally, the agencies stated that the Applicant and its consultants would be preparing the EIS. However, because the public objected to this arrangement and pointed out that it would violate NEPA, the agencies made the following announcement in the DEIS May 21, 2010 cover letter:

> While EFSEC and BPA are the entities that have prepared the Draft EIS, these agencies have worked collaboratively with Whistling Ridge Energy LLC to

[3] These consultants include employees of URS Corporation, West Inc., and others. Although several consultants who prepared the application also are listed in section 6 of the DEIS as "preparers" of the DEIS, none of them noted their role in preparing the application on their disclosure statements in Appendix F.

> obtain necessary information about the project and its potential impacts for the EIS. Initially, EFSEC had intended to allow Whistling Ridge Energy LLC to prepare the EIS, as allowed by SEPA; however, after public concern was raised, EFSEC and BPA decided that the lead agencies would be directly responsible for preparing the EIS. Accordingly, we have used environmental information provided by Whistling Ridge Energy LLC and its consultants in the EIS as appropriate. All such information has been independently evaluated and reviewed for accuracy by the lead agencies, as well as by an independent, third party consultant retained by EFSEC.

This statement invites more questions than it answers. What was the exact nature and extent of the involvement of WRE and its consultants in the preparation the DEIS? Did they simply supply environmental "information," as stated in the cover letter, or did they supply analysis, findings, and/or conclusions for the DEIS? Why does the DEIS adopt lengthy passages from the application verbatim or practically verbatim? If WRE and/or its consultants were allowed to write portions of the DEIS, will the agencies identify which portions? Were the applicant and/or its consultant allowed to review any portions of the EIS before it was made final, and if so, did they make any changes to it?

There is a major difference between the applicant's consultants supplying the agencies with information and data (such as species survey data, photographs, coordinates for turbine locations, etc.) and the applicant's consultants drafting analysis and conclusions to be inserted into the DEIS document. Unfortunately, the DEIS cover letter does not satisfactorily explain which scenario occurred, but the extremely biased nature of the DEIS in favor of the project strongly implies an active role by the Applicant's consultants in its preparation.

An attached May 28, 2010 email string further calls into question whether EFSEC and BPA staff actually wrote the content of the EIS, or allowed the applicant's consultants to write it. The emails show that a landscape architect with the U.S. Forest Service telephoned the EFSEC Site Manager "express[ing] concerns about the quality of the [visual resource] analysis." The

Forest Service employee asked EFSEC "who did the analysis," "what their qualifications were," and "whether or not a Landscape Architect was consulted during development of this section." Apparently not knowing the answer to these questions, the EFSEC Site Manager appears to have referred the questions to the Project Manager with URS Corporation, the Applicant's lead consultants.

As with the agencies' DEIS cover letter, this email string poses a number of questions. If EFSEC and BPA prepared the DEIS, why does it appear that EFSEC had to ask the Applicant's consultants who wrote it? If the agencies were directly responsible for the content of the EIS, why did they not know whether a landscape architect participated in its drafting? And as the Forest Service asked, who in fact "did the analysis," and what were their qualifications?

On the face of the email and the DEIS itself, it certainly appears as if the same people who wrote the application (*i.e.*, the Applicant's consultants) were also allowed to prepare the analysis reviewing the application. In fact, it appears that the entire scenic resources analysis section of the application, including all analysis, findings, and conclusions, was simply lifted from the application and inserted verbatim into the DEIS. Although the agencies claim to have "prepared" the content of the DEIS and independently reviewed and verified any information from the applicant, by all outward appearances this did not occur—at least with major sections of the DEIS. Rather, it appears that the Applicant's consultants were allowed to write major portions of the DEIS. If so, then the Applicant has been allowed to exert undue influence over the content of the DEIS. The predictable outcome is a DEIS that, in effect, serves as an extremely biased and result-oriented prospectus for the proposed project exactly as proposed by the Applicant, instead of the searching and balanced decision-making document required by NEPA and SEPA.

NEPA case law and guidance are clear that an applicant, such as Whistling Ridge Energy, should not be allowed to influence the analytical content of an EIS. *See, e.g., Sierra Club v. Sigler*, 695 F.2d 957, 962 n.3 (5th Cir. 1983) (expressing serious concern over role of private firm in preparation of EIS). An EIS must be an entirely objective analysis intended to aid the decision maker and the public in understanding the consequences of an agency decision. Thus, it is standard practice for action agencies to ensure that applicants for federal action are insulated from all aspects of EIS preparation other than providing information.

Any arrangement that allows the very same consultants who drafted the application to also draft analytical content for the DEIS is improper and cannot be allowed to continue. If in fact the agencies have been relying on the Applicant's consultants (rather than agency employees) to draft analytical content for the DEIS, then the agencies should immediately withdraw the DEIS, and should either retain new consultants unaffiliated with the applicants to prepare a revised DEIS or should ensure that a revised DEIS is drafted by disinterested agency employees. The Applicant and its consultants must not be allowed to continue to play a direct and significant role in the preparation of factual and legal conclusions in the EIS. Such a role is improper and invalidates the DEIS as the basis for further decision-making.

The agencies also state that they have hired a third-party consultant who has been charged with independently verifying the content of the DEIS. However, it is ultimately the agencies' responsibility, and not that of any consultants, to independently verify the DEIS's content. The agencies are "responsible for the independent verification and use of the data, evaluation of the environmental issues, and . . . the scope and content of the environmental assessment." *Save Our Wetlands v. Sands*, 711 F.2d 634, 642 (5th Cir. 1983). Given the

extremely biased nature of this document, Friends questions whether the agencies are meeting this responsibility.

II. The DEIS Does not Demonstrate that EFSEC and BPA Consulted with Agencies with Expertise in the Resources that Would be Affected by the Whistling Ridge Energy Project.

EFSEC must consult with agencies with expertise in the resources that may be impacted by the proposed development. RCW 43.21C.030(2)(d); WAC 197-11-408(2)(a). SEPA requires that the agency "utilize a systematic, interdisciplinary approach" to environmental review. RCW 43.21C030(2)(A). EFSEC's SEPA regulations also require that EFSEC works with interested agencies throughout the preparation of the DEIS. WAC 463-47-140(5).

Similarly, NEPA requires that BPA request comments from federal agencies with special expertise in the resources that would be affected by the proposed development. 40 C.F.R. § 1503.1(a)(1). NEPA requires that the BPA seek comments from state agencies and tribal governments. 40 C.F.R. §1503.1(a)(2). The NEPA regulations also requires that federal agencies respond to requests for comments: "Federal agencies with jurisdiction by law or special expertise with respect to any environmental impact involved and agencies which are authorized to develop and enforce environmental standards shall comment on statements within their jurisdiction, expertise, or authority." 40 C.F.R. § 1503.2. NEPA regulations also require that BPA prepare the DEIS "concurrently with and integrated with" required consultations. 40 C.F.R. § 1502.25(a).

Despite these clear, abundantly sensible requirements, the DEIS fails to show consultation with agencies that have expertise in the resources that would be impacted by the proposal. In fact, comments from expert agencies conveying substantial concerns about significant adverse impacts from the proposal were summarily ignored. These agencies were not

even listed under the "Environmental Consultation" section of the DEIS, nor in the Distribution List for receiving copies of the DEIS after they commented. *See* DEIS at §§ 4.0, 5.0.

EFSEC and BPA are unambiguously required to seek comments from agencies with expertise in the resources that would be impacted. Federal agencies with special expertise have a nondiscretionary obligation to respond to those requests with comments. Agencies with expertise in the resources that would be affected include the USDA Forest Service, which administers portions of the Columbia River Gorge National Scenic Area and the Lower White Salmon Wild and Scenic River Area, and the National Park Service, which administers the Lewis & Clark National Historic Trail, the Oregon Pioneer National Historic Trail, and the newly designated Ice Age Floods National Geologic Trail. As administrators of these areas, both agencies have expertise in evaluating impacts to scenic resources and historically important viewsheds.

Both of these agencies submitted comments during the scoping process. Both comments pointed out that the project would cause significant adverse impacts to scenic resources and recommended mitigation measures, including removal of turbines from Scenic Area viewsheds as seen from designated key viewing areas. These comments have been summarily ignored. The DEIS demonstrates an utter failure of the agencies to follow through with the requirements of NEPA and SEPA, as well as the agencies' duties to protect environmental values and surrounding communities, by responding to these expert agencies' comments.

The scenic resources that would be affected by the proposal are of national significance. This warrants the utmost care in consulting with expert agencies to ensure that the decision-making agencies have impartial and objective analysis of the likely impacts to the environment.

The Forest Service has inventoried and ranked the viewshed that would be directly affected by this project, and has the expertise to measure the impacts of the proposal on this

landscape. Thus, the Forest Service's inventories and conclusions are directly relevant to the scenic resource impacts analysis for the project. Portions of the viewsheds that would be affected have been identified by the Forest Service as having the highest rankings for scenic values. This includes "outstanding" scenic diversity, "primary" landscape significance, and "critical" landscape sensitivity. The Forest Service staff has special expertise in evaluating how the development would impact these landscapes, and must be consulted.

It is of paramount importance that both EFSEC and the BPA address the Forest Service's scoping comments and seek further clarification from the Forest Service regarding the likely project impacts. Given the level of study already performed by the Forest Service with respect to the affected scenic resources, the DEIS does a disservice by not incorporating that information into the environmental review.

Swift v. Island County established the importance of taking expert agency comments into consideration during SEPA review. *Swift v. Island County*, 87 Wash. 2d 348, 552 P.2d 175 (1976) (en banc). In *Swift* the court ruled that an Island County determination of non-significance violated SEPA because the finding conflicted with the comments of other agencies and experts. The agencies and experts included "the United States Department of the Interior, Fish and Wildlife Service; State Parks and Recreation Commission; State Department of Game; State Department of Ecology; the Central Whidbey Island Historic Preservation Advisory Committee" and an authority on birds. 87 Wn. 2d at 355. Just as Island County ignored expert agency comments in *Swift*, EFSEC is completely ignoring expert agency comments in the present matter.

EFSEC and the BPA should also address whether expert agencies have altered or withheld comments due to pressure from elected officials. Documents obtained through public

records requests and submitted by Keith Brown and Teresa Robbins have uncovered e-mail chains evidencing political interference and muzzling of agency experts at the direct request of the applicant. This episode underscores EFSEC's and BPA's legal and moral obligations to ensure that thorough and complete expert agency consultation is obtained regardless of the political connections of the proponent.

The Applicant has asserted that the expert agencies are somehow attempting to improperly assert control over private land outside their jurisdictions. This is entirely inaccurate. Simply put, the agencies have expertise in the resources that would be affected by the proposed development, and therefore must be consulted pursuant to NEPA and SEPA. The consulting agencies simply help the action agencies understand and evaluate the harm to the environment that would result from this proposal. The Applicant apparently fundamentally misunderstands the role of consulting agencies under NEPA and SEPA.

The National Park Service's interest in the affected resources is evidenced by the Management Plan for the Lewis and Clark National Scenic Trail and recent mission statements that accompanied notices that the Park Service will be revising the Lewis and Clark Trail Management Plan: "Certain segments of the Lewis and Clark National Historic Trail *retain characteristics and a sense of place as seen and experienced by the original expedition and continue to provide opportunities for similar experiences today.*" Lewis and Clark Trail Master Planning Newsletter (July 27, 2010) (emphasis added). "Today the Missouri, Clearwater, and Columbia Rivers, their watersheds, and the overland routes across the Rocky Mountains have changed, however, *the natural resources and ecosystems that remain intact are fundamental to the experience of this Trail. These complex resources are critical to providing the context within which modern visitors experience the Trail and the story of Lewis and Clark.*" Lewis and Clark

Trail Master Planning Newsletter (July 27, 2010). The Park Service certainly has the mandate and the expertise to comment on the likely impacts of the project.

EFSEC and BPA should also actively solicit comments from the Oregon Department of Transportation and the Oregon Parks and Recreation Department. These agencies manage the Historic Columbia River Highway, which is listed on the National Register of Historic Places as a National Historic District. The proposal would adversely affect views from the Historic Highway, harming the scenic, recreational, and historical values of the resource. These agencies are also coordinating plans to restore abandoned sections of the Historic Highway as part of the "Milepost 2016 Reconnection Project," which furthers the goals of the Historic Columbia River Highway Master Plan, portions of which are attached hereto. The impacts to these efforts, in terms of impacts to historical interpretation opportunities and scenic resources, must be acknowledged and consulted on.

EFSEC and the BPA must also consult with the Columbia River Gorge Commission, which manages the landscape and regulates land use and development in the immediate vicinity of the project. The DEIS mentions the Columbia River Gorge National Scenic Area Act in the "Environmental Consultation" section, but does not mention consulting with the Gorge Commission. DEIS at 4-9, § 4.11. This section should be revised to accurately reflect the regulatory framework for the National Scenic Area. This section states that the General Management Area of the Scenic Area includes a mixture of "farming, logging, residential, and cattle grazing" land uses. DEIS at 4-9. The section should be revised to state that the General Management Area also includes public recreation and commercial recreation uses along with some of the most sensitive open space areas. EFSEC and the BPA must also consult with the Gorge Commission regarding any regulatory review that would be required to ensure compliance

with Scenic Area Act standards for the portion of the project located within the National Scenic Area—namely, the proposed haul route.

The DEIS at 3-141 and 3-194 also quotes 16 USC § 544*o*(a)(10), which states that the Scenic Area Act does not, "of itself," authorize the creation of any buffer or protective perimeter. This provision does not prohibit expert agencies from using the National Scenic Area's resource inventories and regulatory standards as tools for measuring impacts to the environment.

Agencies with expertise regarding wildlife, including the U.S. Fish and Wildlife Service and Washington State Department of Fish and Wildlife, must be consulted. And the Washington Department of Natural Resources must be consulted regarding compliance with the Washington Forest Practices Act, which regulates the conversion of forested land to non-forestry uses. The Washington DNR must also be consulted regarding the feasibility of alternative siting locations on public land to the north of the current project area.

III. The DEIS Misquotes and Misrepresents the Language and Meaning of the Columbia River Gorge National Scenic Area Act.

The DEIS attempts to rewrite the Columbia River Gorge National Scenic Area Act to effect a dramatically different purpose than intended by Congress. This misrepresentation, if it goes uncorrected, would dramatically hinder EFSEC's and the BPA's ability to protect the public from adverse impacts to important local, state, and national resources. The DEIS includes the following passage that purports to quote the Columbia River Gorge National Scenic Area Act:

> The Act states that "*no protective perimeters or buffer zones shall be established around the scenic area or each special management area. Activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas*" (16 U.S.C. § 544O(a)(10)).

DEIS at 3-194 (emphasis in original).

The above language, reprinted verbatim from the DEIS, seriously misquotes and misrepresents the Act. The actual language in the Act is as follows:

(a) *Nothing in this Act shall . . .*

> (10) Establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas.

16 U.S.C. § 544*o*(a)(10) (emphasis added).

The first sentence of the misquoted Act in the DEIS completely changes the meaning of the statute. The intent to misrepresent is clear. The difference in the meaning of the true wording versus the quoted wording is significant.

The language in 16 U.S.C. § 544*o*(a)(10) provides that *nothing in the Scenic Area Act* shall establish protective perimeters or buffer zones. It does not, as the DEIS language states, outright prohibit protective buffers, for example under operation of some other local, state, or federal law. EFSEC and the BPA must apply numerous other laws in their decision-making, and must protect affected resources and communities. The misquoted language in the DEIS implies that Congress mandated that some other law or factor, independent of the Scenic Area Act, could not result in the protection of lands adjacent to the Scenic Area. This is absolutely incorrect. While the Scenic Area Act does not in and of itself impose buffers, neither does it prevent them under operation of other laws.

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IV. The DEIS Prematurely and Erroneously Concludes That the Project Would Be Consistent With the Applicable Land Use Regulations.

A. The Land Use Consistency Determination in the DEIS is Premature.

The DEIS concludes that "the proposed project would be consistent with the applicable land use regulations." DEIS 3-152. The DEIS further states that "the project would be consistent with the Comprehensive Plan vision and the Conservancy designation in that it would conserve and manage existing natural forest and wind resources to maintain a sustained yield and utilization of both." *Id.* These and all other statements in the DEIS regarding consistency with applicable land use regulations are premature, because EFSEC has not yet concluded its land use consistency process nor issued a determination as to whether the proposed project is consistent and in conformance with the applicable land use plans and zoning ordinances through the process required by WAC 463-26-110 and RCW 80.50.090(2). The DEIS erroneously contains consistency determinations long before the issue of consistency will be adjudicated in the land use process before EFSEC. EFSEC has effectively prejudged the consistency results by including its premature conclusions in the DEIS.

The DEIS should be revised to remove all conclusions as to land use consistency. Instead, the DEIS should state what the potentially applicable regulations are, and then state that EFSEC will reach a conclusion on consistency as part of its adjudicative process, and that the BPA will decide whether it concurs with that determination. At most, the DEIS could summarize the different arguments that have been made to date regarding the applicable regulations. But prejudging consistency long before the consistency process is complete is inappropriate and a violation of Friends' right to a fair and impartial adjudicative hearing.

Contrary to the conclusions in the DEIS, the project is *not* consistent with applicable land use requirements. Friends will continue to address, via EFSEC's adjudicative process, the many

reasons why the project is not consistent with the applicable land use requirements. Rather than restate Friends' arguments at length in the instant comments, Friends relies on its previous submissions to EFSEC, as well as its briefing to the Skamania County Hearing Examiner in the prior administrative appeal involving Skamania County's proposed (now abandoned) energy zoning amendments (County File No. SEP-08-35),[4] except as modified or supplemented below. Friends also adopts and reiterates all arguments of Save Our Scenic Area regarding land use consistency.

B. The Application and DEIS are Inconsistent and Incomplete Regarding the Proposed Haul Route through the National Scenic Area.

The Application and DEIS are internally inconsistent and incomplete regarding the proposed haul route through the National Scenic Area. The specialized trucks for hauling wind energy turbine components for this project are both massive and heavy; these trucks may have trouble navigating certain intersections and bridges. The application and DEIS do not clearly establish which route is proposed through the National Scenic Area, and whether that route would entail any road construction or ground-disturbing activities within the General Management Area of the National Scenic Area. The information that *has* been made available about the haul route is internally inconsistent and does not comply with EFSEC's rules for a complete application.

EFSEC rules require, among other items, the application to include information about traffic and transportation impacts:

> (1) Transportation systems. The application shall identify all permanent transportation facilities impacted by the construction and operation of the energy facilities, the nature of the impacts and the methods to mitigate impacts. Such impact identification, description, and mitigation shall, at least, take into account:

[4] Copies of all the relevant documents from both proceedings are attached hereto as exhibits.

* * *

(b) Access routes for moving heavy loads, construction materials, or equipment;

* * *

(2) Vehicular traffic. The application shall describe existing roads, estimate volume, types, and routes of vehicular traffic which will arise from construction and operation of the facility. The applicant shall indicate the applicable standards to be utilized in improving existing roads and in constructing new permanent or temporary roads or access, and shall indicate the final disposition of new roads or access and identify who will maintain them.

* * *

WAC 463-60-372.

The original application proposed two alternative haul routes through the National Scenic Area, Routes 1 and 2. The amended application adds a third alternative haul route, Route 3. Amended Application at 2.19-3. The DEIS adopts Route 3 as the haul route for the project. DEIS at 1-12.

At page 1-16, the DEIS states that both Routes 1 and 2 have been "eliminated as . . . construction roadway access alternative[s]." However, at page 3-172, the DEIS states that Route 1 (the Ausplund Road Route) "would be used to access the [project site] for construction and maintenance." The agencies need to address this inconsistency, and clarify the extent to which Routes 1 or 2 would be used, if at all, for this project.

Moreover, a number of unanswered questions remain regarding Route 3, and specifically whether this route would involve any road construction or ground-disturbing activities within the General Management Area of the National Scenic Area. This route includes an aging bridge on Cook-Underwood Road across the Little White Salmon River and within the GMA. In the attached November 6, 2009 letter submitted to the Gorge Commission, WRE freely admits that "[t]he County has not yet determined whether any modifications or repair of [this] bridge would

be required" to enable the bridge to be used for the haul route. Furthermore, there is no evidence in the application or in the record, such as engineering schematics or a discussion of the bridge's load-bearing capacity, to establish whether construction work on the bridge will be necessary for this project.

In addition, an intersection of particular concern is the eastern intersection of Cook-Underwood Road and SR-14. WRE's initial application states that road construction, including road widening, "would be required" at this intersection in order to provide a sufficient turning radius for oversized trucks hauling wind turbine components. Original Application at 4.3-13. WRE provided specific numbers for the necessary width of the inside turning radius. *Id.* According to WRE, "[w]idening would include removal of guardrail and an engineered fill section on the inside of the turn, and an engineered fill section and a possible embankment cut section." *Id.* In addition, "[t]he engineered fill and embankment cut sections . . . would require an all-weather driving surface." *Id.* Finally, "[r]ight of way ownership and easement determination would be required." *Id.*

Then, after Appellants filed an appeal with the Gorge Commission of the County's decision on the initial application, WRE abruptly made a 180-degree reversal on whether road construction is required at this intersection. Even though WRE still proposes to use this intersection as part of its preferred haul route, WRE in the amended application has deleted all language discussing the necessary road work and replaced it with language summarily concluding that no road construction will be necessary along the haul route. Amended Application at 4.3-14. When asked to explain the rationale behind these discrepancies, WRE merely stated in its November 6, 2009 letter that "[n]o roadway improvements *have been identified* as being needed at either the west or east intersection of SR-14 and Cook-Underwood

Road." (emphasis added). This unhelpful statement completely ignores, and is in fact contradicted by, WRE's previous statements that road improvements at the east intersection "*would be required.*" Original Application at 4.3-7 (emphasis added).

The western intersection of Cook-Underwood Road and State Route 14 is also important. The Applicant has proposed to use this intersection as part of the haul route, but has also not shown that road improvements at this intersection would not be necessary.

These distinctions are important, because if this project does in fact involve road construction or ground-disturbing activities within the GMA, such activities must be reviewed by Skamania County under the Scenic Area laws and rules for whether they are allowed and for the protection of resources. SCC § 22.06.010.

The agencies need to require better information about the proposed haul route, and resolve whether any road work would in fact be necessary. If so, Scenic Area review and a decision by Skamania County will be required.

V. The Environmental Impact Analysis in the DEIS is Seriously Deficient.

A. The DEIS Fails to Give Adequate Consideration to Cumulative Effects.

The consideration of cumulative effects in the DEIS is inadequate. A cumulative impact is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." 40 C.F.R. § 1508.7. NEPA requires that an EIS assess cumulative impacts in sufficient detail to be "useful to a decision maker in deciding whether, or how, to alter the program to lessen cumulative impacts." *City of Carmel-By-The-Sea v. U.S. Dep't. of Transp.*, 123 F.3d 1142, 1160 (9th Cir. 1997). The cumulative impacts analysis for a proposed project must examine past, present, and proposed/reasonably foreseeable actions in the same area. 40 C.F.R. §§ 1508.7, 1508.25, 1508.27(b)(7); *Tomac v. Norton*, 433 F.3d 852, 864 (D.C. Cir. 2006).

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7. "To consider cumulative effects, some quantified or detailed information is required. Without such information, neither the courts nor the public, in reviewing [an action agency's] decisions, can be assured that the [agency] provided the hard look that it is required to provide." *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998). The cumulative effects of the proposed action, combined with the cumulative effects of other proposed actions, must be described in detail. *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 810 (9th Cir. 1999). Broad and general statements "devoid of specific, reasoned conclusions" are not sufficient; neither are one-sided cumulative impact statements. *Id.* at 811.

As an initial matter, the geographic scope used in the DEIS to examine cumulative impacts is internally inconsistent and arbitrary and capricious. On the very same page (1-36), the DEIS contains two different geographic standards for measuring cumulative impacts. First, under Existing Development, the DEIS properly sets the geographic scope for wind power development as extending from Cascade Locks to the intersection of I-84 and I-82. Then, on the very same page, under Reasonably Foreseeable Future Development, the DEIS arbitrarily limits itself to projects within 20 miles from the Whistling Ridge project site. This internal inconsistency is arbitrary. Many of the existing wind projects more than 20 miles away contribute to adverse cumulative effects in conjunction with the proposed Whistling Ridge project. For instance, these existing wind projects can be seen in same viewshed as the Whistling Ridge site, as viewed from locations within the Gifford Pinchot National Forest such as Little Huckleberry Mountain. The arbitrary limit of 20 miles also means that certain pending projects such as Windy Flats West, which may have similar impacts on the National Scenic Area to those

of Whistling Ridge, but which is 26 miles away, are being improperly excluded from the impacts analysis.

The attempt in the DEIS at identifying and evaluating the cumulative impacts is sorely lacking. The DEIS fails to consider adequately the past, present, and reasonably foreseeable future impacts of other projects in the area. First, the DEIS does not adequately catalogue or discuss the impacts of past projects on the area, as it is required to do under NEPA. *City of Carmel*, 123 F.3d at 1160. Rather, it arbitrarily limits itself to considering only other wind projects, and even then relies on a rough and incomplete list of existing wind projects that discusses generalities, without providing the information necessary to complete the reasoned analysis that NEPA requires. Second, the DEIS fails to catalogue or analyze the impact of numerous planned or ongoing development projects, including wind projects and other types of projects.

For example, the DEIS fails to consider the cumulative impacts of the proposal in relation to the following planned and ongoing projects:

- The DEIS, at pages I-36 and 3-265–266, relies only on a wind power map and list found at http://www.nwcouncil.org/maps/power/Default.asp. The map relied on by the DEIS is severely incomplete, missing multiple wind energy projects within the project study area, including but not limited to Windy Flats West, Windy Flats, Windy Point II, Miller Ranch, Hoctor Ridge, Imrie, Linden Ranch, Miller North, Windtricity, Harvest Wind, School Section, Golden Hills, Golden Hills Addition, Golden Hills 2, Golden Hills 3, Biglow Canyon 2, Biglow Canyon 3, Nook Wind, Star Point, Shepherds Flat, Shepherds Flats 2, Shepherds Flat 3, Shepherds Flat 4, Shepherds Flat 5, Pebble Springs, Willow Creek, Montague I,

Montague II, Condon Wind, Summit Ridge, Baseline, Saddle Butte, Echo Wind, and PáTu. The DEIS fails to consult multiple other maps and lists of wind projects in the region, let alone the documents pertaining to those projects such as environmental impact statements. As a result, the cumulative impacts of this project in conjunction with other wind projects in the region is grossly underestimated. Maps and lists of other wind projects can be found at http://www.klickitatcounty.org/planning/FilesHtml/windprojects.pdf, http://www.oregon.gov/ENERGY/SITING/review.shtml, and http://www.transmission.bpa.gov/PlanProj/Wind/documents/BPA_wind_map_2010.pdf and are being filed as Exhibits herewith.

- The applicant here, Whistling Ridge Energy, desires to construct an additional 35 turbines on DNR lands immediately adjacent to the north of this project. This project, known as "Saddleback" or "Whistling Ridge Phase II," has been placed on hold by the DNR, but that hold could be removed at any time. The DEIS states that "use of these lands for project turbines was rejected from further consideration." DEIS at 1-14. However, recent public records requests have uncovered new evidence that the use of DNR lands is still contemplated by WRE. Specifically, the attached April 9, 2010 email shows that WRE was evaluating whether a temporary FAA moratorium on certain wind projects would prohibit expansion onto the DNR lands. The DEIS fails to sufficiently address the likelihood of Phase II of this project going forward, and fails to address the cumulative impacts of expanding the scope of this project onto the adjacent land. All phases and portions of a project must be evaluated at the outset during

environmental review of the first phase. *See Merkel v. Port of Brownsville*, 8 Wn. App. 844, 850–51, 509 P. 2d 390, 395 (1973); *Indian Trail Property Owner's Ass'n v. City of Spokane*, 76 Wn. App. 430, 443, 886 P.2d 209 (Wn. App. 1994).

- The Broughton Lumber Company has proposed a 250-unit housing development and recreation resort at the site of its defunct lumber mill in Skamania County, Washington. The site is in the same viewshed as the proposed Whistling Ridge Project.
- A casino is proposed in Cascade Locks, Oregon. If built, it would induce unprecedented amounts of traffic through the National Scenic Area. The cumulative impacts of this project, including the high volumes of casino traffic in conjunction with the heavy and oversized load truck traffic potentially travelling along I-84 for the Whistling Ridge project, was not considered.
- Every year, multiple residential dwellings are approved in the same viewshed as the proposed Whistling Ridge Energy Project. This cumulative scenic impact is not even mentioned, let alone estimated, by the DEIS.
- The DEIS acknowledges that the footprint of the project is within working timber lands, but fails to discuss the cumulative impacts of clearcuting forest in conjunction with permanently converting forest land for industrial use. Washington DNR Forest Practice applications in the vicinity of the project include FPA 2702000, FPA 2702622, FPA 2702784, FPA 2702862, FPA 2703252, and FPA 2704427. The DEIS does not address the cumulative impacts of the massive clearcutting that has occurred or the impacts of those forest practices in conjunction with converting forest land to non-forest use.

- In addition to the forest practices in the immediate vicinity of the project, the DEIS must include evaluation of impacts of the project in conjunction with forest practices in the region. To date the northern spotted owl habitat conservation plan is not succeeding in recovering northern spotted owl populations. Since this project would permanently convert forest land within a Spotted Owl Special Emphasis Area (SOSEA) to non-forestry use, the DEIS must undertake additional analysis of how the industrialization of portions of the SOSEA will affect spotted owl populations within the entire SOSEA and the region.
- The Blue Bridge Pipeline has been proposed to be constructed in the vicinity of the project. This proposal is currently under review by the Federal Energy Regulatory Commission under Docket No. PF09-10-000. The project could involve permanent linear clearcuts in the vicinity of the project.
- Three towns in the Columbia River Gorge National Scenic Area have proposed expansions of their urban area boundaries into Scenic Area lands. These are Hood River, The Dalles, and Lyle. If approved, these urban expansions would result in population growth, more traffic, loss of farm land, forest land, open spaces, and likely adverse effects to scenic, natural, cultural and recreation resources.

These projects and others not analyzed in the DEIS will have cumulative impacts on environmental and socioeconomic factors. In order to adequately evaluate the impacts of the proposed project, the DEIS must consider these current projects. Failure to do so means that the DEIS lacks sufficient detail to allow a decision maker to meaningfully evaluate the full impacts of the proposed project or to decide how to alter the proposal to lessen cumulative effects.

Also, as explained in the attached expert analysis by Dr. Shawn Smallwood, the cumulative impacts analysis in section 3.14.3.5 of the DEIS is methodologically flawed and the conclusions are misleading. Similarly, the cumulative impacts analysis of visual resources in section 3.14.3.10 of the DEIS is methodologically flawed and the conclusions are in error. Landscape architect and expert in visual resource assessment methodologies Dean Apostol has analyzed the DEIS and found the visual analysis woefully lacking and not up to professional standards. For example, the scenic resources cumulative impacts analysis evaluates only impacts to travelers on Interstate 84. While it underestimated the impacts to these views, it completely ignores the impacts to travelers on the Historic Columbia River Highway, the Columbia River, and other recreational resources in the vicinity. The cumulative impacts portions of the EIS are woefully inadequate and do not meet NEPA's or SEPA's requirements to conduct a rigorous and thorough analysis of cumulative impacts.

B. The DEIS fails to consider the direct and cumulative impacts of the proposed development on the energy grid and its infrastructure, and resulting impacts to natural resources.

Under SEPA, the elements of the environment include the built environment, which in turn includes public services and utilities. WAC 197-11-444(2)(d). The energy grid is part of the built environment and impacts to the grid must be considered during the SEPA process. The DEIS failed to adequately analyze impacts to the grid.

The DEIS discusses the need for the project to interconnect to the BPA transmission system, but fails to analyze the indirect and cumulative effects of new wind energy development on the grid and the need for new transmission facilities. DEIS at 3-87—92, 3-278. The DEIS states that the "proposed project would not be expected to affect the operation of the BPA's

transmission system." DEIS at 3-92. The cumulative impacts section of the DEIS makes no mention of the grid or how the project would affect demand for new transmission facilities.

Wind energy production in the region will ultimately be limited by the capacity of the Bonneville Power Administration to integrate new wind energy resources into the BPA electricity grid. Recently, BPA expressed concern about how it will reliably integrate over 6,000 MW of wind energy by 2013. Northwest Power and Conservation Council, Sixth Power Plan, at 12-11 (available at http://www.nwcouncil.org/energy/powerplan/6/default.htm). By adding more energy to the grid, the project increases the need for more capacity and more transmission lines and other infrastructure.

In response to the rapid development of wind energy in the region in recent years the BPA has proposed several new transmission projects. These projects are necessary to integrate the intermittent nature of wind energy and to ensure sufficient transmission capacity to transmit energy to the region and markets in other regions. BPA's own development plans demonstrate that the Whistling Ridge Energy Project would contribute to demand for transmission facilities and contribute to significant adverse impacts to the environment.

The BPA's own documents, some of which are attached hereto as exhibits, explain that the McNary-John Day transmission project and the Big Eddy-Knight transmission project are needed to respond to the demands that new wind energy facilities place on the grid.

To respond to the increased demand for interconnections to the grid, the BPA conducts annual Network Open Seasons where prospective energy producers can submit Transmission Service Requests (TSRs) to BPA. From these requests the BPA offers eligible producers Preferred Transmission Service Agreements (PTSAs). Based on these agreements the BPA calculates the demand for transmission services and the need for any new transmission facilities.

As shown in the attached exhibits, in response to the 2008 Network Open Season, the BPA signed PTSAs securing 6,410 MW of transmission capacity. And in response to the 2009 Network Open Season the BPA signed PTSAs securing 1,553 MW of transmission capacity. In 2010 alone the BPA received TSRs for 4,456 MW of wind energy development that would be eligible to sign PTSAs. If all eligible PTSA are signed and completed, the total new services provided by BPA will total over 12,000 MW, generate the need for hundreds of miles of new transmission lines, and the expenditure of millions of dollars in public funds. The Whistling Ridge Energy Project Project would directly contribute to these impacts. The DEIS must acknowledge and evaluate these impacts and the further impacts that flow from them.

The BPA must include actual data on the grid's capacity to accommodate new sources of intermittent wind energy. As stated above, the BPA has previously expressed concern about how it will reliably integrate over 6,000 MW of wind energy by 2013. Northwest Power and Conservation Council, Sixth Power Plan, at 12-11. The DEIS must include some analysis of how much wind energy the grid can accommodate over the long-term and whether wind integration capacity will limit the amount of wind energy development that can occur in the region. If integration capacity will limit generation potential, then the DEIS must address why the Whistling Ridge Energy Project should take priority over potential development in other locations that would have reduced environmental impacts.

Importantly, the BPA has failed to undertake comprehensive review of the impacts of its transmission system. The BPA's last comprehensive review of the transmission system was in 1995. BPA Business Plan Final Environmental Impact Statement (DOE/EIS-0183) (hereinafter "BPA BP EIS"). That review noted that wind energy could cause adverse impacts to wildlife and scenic resources, but did not undertake any detailed review of how providing access to the

transmission system would lead to impacts from the explosion of wind energy development throughout the region. BPA BP EIS at 4-42, Section 4.3.1. The BPA BP EIS also does not address how much wind energy can be integrated into the grid.

In 2007, the BPA undertook a supplemental analysis of the Business Plan EIS, but declined to undertake further environmental review. Supplemental Analysis of the Business Plan EIS (DOE/EIS-0183) (April 6, 2007). The supplement stated that "continued consideration of a comprehensive policy for BPA's transmission business is not in the best interests of the agency at this time." The supplemental analysis was based on four wind projects totaling 750 MW of wind energy that had been connected to the BPA grid at that time. *Id.* at 42. The analysis did not discuss impacts to wildlife from this development. *Id.* at 46. The analysis did not include a section on scenic impacts, much less how wind energy development enabled by the BPA has transformed scenic landscapes. The supplemental review also failed to acknowledge the ongoing impacts to cultural resources from the development that has been enabled by BPA transmission project. *Id.* at 48—49.

Since the BPA's last review of the environmental impacts associated with the transmission system and the energy production that system allows, an unprecedented level of new wind energy development was occurring throughout the region. Currently over 3,000 MW of wind energy has been interconnected to the grid. The BPA has signed PTSAs for as much as 12,000 additional MW of new generating capacity.

The impacts of this development have dramatically changed landscapes throughout thousands of acres of rural Washington and Oregon along with countless scenic vistas. This development is also killing or displacing an unknown number of birds and ongoing damage to cultural resources is occurring from the excessive ground disturbance and road building. Another

type of impact not anticipated or reviewed in the EIS is the potential overloading of the energy grid as a result of the dramatic increase in wind energy in the region, which can in turn affect fish populations by requiring an excess spilling of water over the region's hydroelectric dams in order to balance out unexpected surges in wind energy production.

This rapid expansion in wind energy has occurred without any programmatic review of the impacts of the generating sources, the existing transmission system, or the demands for new transmission lines. This has also occurred without an adequate understanding of how much wind energy development the grid can accommodate and how projects could be prioritized for grid access based on environmental impacts. These significant changes warrant preparation of a comprehensive cumulative impacts analysis. The DEIS must be substantially revised to reflect the project's contributions to the regional impacts of wind energy development.

C. The DEIS Fails to Adequately Evaluate and Address the Impacts of the Proposed Development on Scenic Resources.

SEPA requires that the environmental analysis include discussion of impacts to sensitive areas. The SEPA official "shall" consider whether a "proposal may to a significant degree . . . [a]dversely affect environmentally sensitive or special areas, such as loss or destruction of historic, scientific, and cultural resources, parks, prime farmlands, wetlands, wild and scenic rivers, or wilderness." WAC 197-11-330(3)(e)(I). SEPA also requires analysis of impacts to scenic resources. WAC 197-11-440(1)(e)(iv).

The current proposal is for a major industrial development towering over ridgelines on the perimeter of the Columbia River Gorge National Scenic Area, overlooking important segments of the Lewis and Clark National Historic Trail and the Historic Columbia River Highway, adjacent to the Gifford Pinchot National Forest, and adjacent to recreational trails on Washington Department of Natural Resources land. The proposed facility would overlook miles

of National Scenic Area viewsheds that have been inventoried as some of the highest quality scenic landscapes in the Gorge.

Unfortunately, the DEIS grossly mischaracterizes the likely impacts of the Whistling Ridge Energy Project on scenic resources. Instead of following SEPA's mandate to provide an unbiased and objective assessment of likely impacts, the DEIS blatantly misapplies established principles of landscape management to conceal the likely impacts of the proposed action. The analysis also violates NEPA's requirement that "[a]gencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements." 40 C.F.R. 1502.24. The DEIS does not list a single landscape architect, much less a landscape architect with training in scenic resource analysis methodologies, in the list of preparers. DEIS at Section 6.0. The lack of professional and scientific integrity is plainly evident through the scenic impacts analysis. The analysis is fundamentally flawed and violates both NEPA and SEPA.

As explained in the attached comments of Dean Apostol, the analysis completely misinterprets and misapplies the Federal Highway Administration's visual assessment system and the Forest Service's Scenery Management System. In addition, the analysis fails to consider impacts to several critical viewpoints and view corridors, reaches erroneous conclusions regarding the potential impacts on scenic resources, and fails to consider viable mitigation measures. Mr. Apostol concludes that the likely scenic impacts of the project would be significant because the project would highly contrast with an intact, high quality scenic landscape that is viewed by substantial number of viewers with high expectations for scenic quality. The project would break the skyline and/or be highly visible from multiple public vantage points and it is impossible to "blend in" wind turbines more than 400 feet tall into this

landscape. The DEIS also erroneously ties scenic sensitivity to distance zones. DEIS at 3-159. Low, moderate, and high impacts can occur in any distance zone depending on the impacts analysis.

The environmental review failed to sufficiently analyze the visual impact of the project as viewed from linear viewing areas such as Interstate 84, the Columbia River, the Historic Columbia River Highway, the Lewis and Clark National Historic Trail, and State Route 141. For some of these scenic corridors basic information such as the distance along linear viewing areas from which the project would be visible, an estimate of the amount of time the project would be visible when traveling along these view corridors, and a simulation of the most visible portion of the project as viewed from these viewing areas is missing from the analysis. Of particular concern is the complete absence of any analysis of views from the Columbia River and the Historic Columbia River Highway.

The DEIS also fails to supply sufficient information to understand and review potential impacts from lights on the proposed wind turbines—particularly nighttime impacts. DEIS at 3-161, 3-173, & 3-195. While FAA lighting standards may be required, compliance with federal regulations does not obviate the duty to comply with state law requiring full disclosure of all environmental impacts. The applicant must document how many lights would be visible from within the National Scenic Area viewshed. The applicant needs to provide additional information regarding what type of lighting would be installed, and which turbines would likely contain lighting. Without this information, it is impossible to accurately evaluate the scenic impacts of the project.

The DEIS also fails to include a detailed explanation of both the methodology used to create the visual simulations and the proper technique for viewing the simulations. To begin

with, all visual simulations should be accompanied by substantial disclaimers regarding their ability to depict real-world impacts. Two dimensional renderings can never accurately simulate the experience of real-world views. Nonetheless, visual simulations do have value in evaluating aesthetic impacts if best practices are used in preparing the simulations and proper qualifications are noted. Lens size, field of view, the format of the image in the simulations, and the viewer's distance from the image all play critical roles in presenting an accurate depiction of aesthetic impacts. For example, the wider the angle of view of a camera lens, the further away an object appears, and the narrower the angle of view, the nearer an object appears. If digital cameras were used, image distortions would need to be factored in when preparing the image. Similarly, the size of the simulation image and the viewer's distance from the image can dramatically alter the perceived impacts of development. EFSEC and the BPA must require clarification on these points to ensure that the inherent flaws in visual simulations are explained.

EFSEC and the BPA should also consider the National Academy of Sciences' recent document entitled, Environmental Impacts of Wind-Energy Projects (National Academies Press, 2007), which includes methodology for analyzing possible impacts from wind development on aesthetic resources. The DEIS should be revised to include discussion of the various standards described in this resource, which was cited and applied in other sections of the DEIS.

The DEIS argues that the visual impacts from roads and electric lines would be negligible. DEIS at 3-173–3-174. However, road and power lines have direct visual impacts and also contribute to the cumulative impacts of a project. As such, they must be included in the visual simulation and analysis. In particular, road and electric lines would likely be highly visible when viewed from recreational areas to the north of the project. These include recreational trails in the Gifford Pinchot National Forest and on land owned by the Washington Department of

National Resources. Particular recreational areas of concern include the Nestor Peak, Little Buck Creek Trail, Grassy Knoll, Little Huckleberry Mountain, and Cook Hill.

The conclusions regarding scenic impacts in the application are clearly in error. The project would have high scenic impacts, given viewer expectations, and the quality of the views that would be impacted. The proposed development would dominate the middleground and background views from multiple important viewpoints.

Not only did the DEIS fail to adequately review scenic impacts, it also failed to propose any mitigation or discuss any unmitigated adverse impacts that would occur. Measures and conditions that should have been, but were not, evaluated include alternate designs and siting to reduce visibility.

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1. The DEIS Fails to Acknowledge Existing Scenic Resource Inventories and Visual Quality Objectives for the Affected Landscape.

The DEIS analysis of scenic impacts states that visual quality objectives (VQOs) have not been established for the landscape that would be affected by the proposed development. DEIS at 3-156. This assertion is demonstrably false. The Forest Service and Gorge Commission have established VQOs for the landscapes that would be affected by the proposed development. These VQOs are based on some of the most extensive and complete scenic resource inventories in the country. These VQOs must be used to measure the impact to viewsheds that would be altered by the proposed development.

In preparing the Management Plan for the National Scenic Area, the Gorge Commission and the Forest Service were required to inventory scenic resources of the National Scenic Area. *See* 16 USC 544d.(a)(1)(A). Pursuant to that mandate the Forest Service and Gorge Commission completed a scenic resource inventory using the Forest Service's Visual Management System

("VMS"), which is the scenic resource management methodology provided in the Forest Service's "National Forests Landscape Management Vol. 2" (Agriculture Handbook 462).[5]

All viewsheds visible from primary key viewing areas were inventoried. These inventories served as the basis for all scenic resource management policies and guidelines in the CRGNSA Management Plan. The original scenic resource inventory includes the following elements: Visual Attributes, Landscape Diversity, Landscape Significance, Seen Areas from Key Viewing Areas, Visual Absorption Capability, and Landscape Sensitivity. The 1991 CRGNSA Management Plan described the inventories:

> Six maps were developed in the process of inventorying scenic resources. These maps are based on the Forest Service Visual Management System. They have been used to develop policies and guidelines that respond to the various levels of visual significance and sensitivity within the Gorge, and that highlight protection of landscapes seen by large numbers of people.
>
> The first inventory map created, "Visual Attributes," identifies 12 predominant landscape types found in the Gorge, ranging from rural townscapes to cliffs.
>
> The "Landscape Diversity" map gauges the variety of visual features in the landscape. A basic premise of the visual management system is that visual diversity is a key element of those landscapes people find most visually appealing and interesting. Much of the Gorge, with it steep landforms, forested slopes, waterfalls, pastoral areas, and rural townscapes, has outstanding visual diversity.
>
> A "Seen Areas" map shows which areas are visible from key viewing areas. The key viewing areas are important public vantage points from which Gorge landscapes are viewed. Scenic protection of lands seen from these vantage points has been emphasized since the inception of the Scenic Area planning process. The Management Plan continues this direction.
>
> The "Landscape Significance" map combines the "Seen Areas" and "Landscape Diversity" maps, based on the concept that the most significant landscapes are those that are both visually diverse and seen from important viewpoints. The "Visual Absorption Capability" map displays the relative ability of different Gorge landscapes to absorb change (through new development) without

[5] The Visual Management System has since been superseded by a revised methodology, the Scenery Management System ("SMS"). The methodology for the SMS is described in "Landscape Aesthetics: A Handbook for Scenery Management." (Agriculture Handbook 701).

> diminishing their scenic qualities. It is based primarily on the degree of slope and amount of vegetative cover.
>
> "Landscape Sensitivity," the last of the six inventory maps, combines "Landscape Significance" with "Visual Absorption Capability," based on the assumption that the most visually sensitive lands are those that are both highly significant and most vulnerable to visual impacts from new development.

CRGNSA Management Plan 1991, at I-1—2. Copies of the inventory maps of the affected landscape are attached to these comments. The CRGNSA Management Plan policies and guidelines that were based on these inventories include the land use designations and landscape setting designations that serve as VQOs.

This background is critical to evaluating the impacts of the proposed development on scenic resources. As seen from the Columbia River, Interstate 84, and the Historic Columbia River Highway the project would break the skyline within viewsheds composed of both SMA Open Space and GMA Open Space land use designations that are also assigned the landscape setting of Gorge Walls, Canyon Lands, and Wildlands. For the SMA viewsheds the applicable VQO is retention, the highest level of scenic protection afforded any landscape in the Gorge. For the GMA viewsheds the applicable VQO is partial retention, with the added protection essentially creating a VQO of retention.

The view from Interstate 84, the Columbia River, and the Historic Columbia River Highway between Starvation Creek State Park and Viento State Park looking north and northeast is dominated by the Dog Mountain SMA and the Underwood Bluff Open Space.[6] The proposed facility would be visible just to the east of the Dog Mountain SMA and north of the Underwood Bluff Open Space area. The attention of visitors traveling along these three scenic corridors would be drawn to the spinning blades and/or blinking lights of numerous wind turbines

[6] Both Starvation Creek State Park and Viento State Park are also designated under the Lewis and Clark National Historic Trail Management Plan.

protruding above the skyline to the northeast. This would obviously detract from the integrity of the viewshed and completely frustrate the purpose of the extensive inventories and protections for this viewshed.

Stationary viewers at Mitchell Point would also be confronted with a dramatic change to the landscape. The view from the Mitchell Point area looks directly north at the Underwood Bluff Open Space area. The original scenic resource inventories assigned Underwood Bluff as "outstanding" landscape diversity, "primary" landscape significance, and "critical" landscape sensitivity. These are some of the highest valued lands inventoried in the Columbia River Gorge and justified a VQO that is essentially retention, the highest standard for protection. The ridgeline of Underwood Bluff forms the skyline from this viewpoint. The contours of Chemawa Hill undulate immediately behind the skyline and are nearly indistinguishable from the Underwood Bluff skyline. Underwood Bluff and its highest rated scenic resources, with Chemawa Hill immediately behind it, dominate the middleground views from this location. The southernmost turbines of the proposed facility would be sited at the top of Chemewa Hill and would break the skyline of views from the Columbia River, Interstate 84, and the Historic Columbia River Highway at this location. Once again, viewers' attention would be drawn to giant spinning blades and/or flashing lights in middleground views of some of the most scenically sensitive views in the Columbia River Gorge.

The DEIS completely failed to acknowledge the robust and complete inventory of the scenic landscapes that would be affected by the proposed development. The existing resource inventories and established VQOs must be used to measure the impacts that would be caused by the proposed development. Based on this information, it is undeniable that the proposed development would cause significant adverse impacts to critically important scenic landscapes.

In addition, the DEIS failed to state whether the project would impact views from the Gifford Pinchot National Forest that have established VQOs.

2. The Scenic Impacts Analysis Deviates from BPA's Past Practices in Evaluating Scenic Impacts.

The application and environmental review diverges from the BPA's analyses of scenic impact for other energy projects in the region. The BPA's Draft EIS for the Central Ferry-Lower Monumental 500-kilovolt Transmission Line Project concluded that construction of a 200-foot-tall transmission line within viewsheds as viewed from the Lewis and Clark National Scenic Trail and the Lewis and Clark Scenic Byway would have "high" impacts to scenic resources. Central Ferry-Lower Monumental 500-kilovolt Transmission Line Project DEIS (July 2010) Section 3.7, p 3-91 to 3-104 (hereinafter Central Ferry DEIS). The Central Ferry transmission lines would be 104 to 189 feet tall and would have no moving parts and no lights. Central Ferry DEIS at 2-5. The BPA acknowledged that the transmission line would be visible from the Lewis and Clark National Historic Trail and scenic byways.

The Central Ferry DEIS described the affected landscape as "Typical view[s] of rolling hills and rural landscape adjacent to scenic by way." Table 3-22. The analysis explained that the transmission line would be 1.6 miles (middleground view) from the Lewis and Clark National Historic Trail at its closest point. Central Ferry DEIS at 3-98. The analysis also acknowledged that the transmission lines would create a skyline effect and break up the continuity of the skyline and open terrain, and that the project would introduce structures into a natural landscape. Central Ferry DEIS at 3-98. "The proposed towers and conductors would be a conspicuous change to the relatively natural and rural landscape and would disrupt the continuity of visual resources in the landscape." Central Ferry DEIS at 3-98. The project would be visible from "popular recreation areas and a frequently traveled roadway." Central Ferry DEIS at 3-98.

In comparison to the Central Ferry to Monument Transmission Project, the Whistling Ridge proposal would be located in a higher quality scenic landscape, with more state and federal designations for scenic, recreational, and historic importance. The project would be viewed by vastly more people with higher expectations for scenic quality. Whistling Ridge would be of comparable distance from important viewpoints, but would be over twice as large (over 430 feet tall compared to 104 to 198 feet tall), have more visible mass, include giant moving parts, include flashing lights, and would be painted white. The Whistling Ridge project would obviously contrast more with the landscape than the Central Ferry project. While the Central Ferry DEIS concluded that impacts would be high, the Whistling Ridge DEIS concludes that impacts to scenic resources would be moderate at worst.

It is abundantly clear that this project has not been reviewed under the same standard as previous projects under BPA review. This evidences an obvious attempt to thwart the purposes of SEPA and NEPA with environmental review that seeks to conceal impacts rather than objectively analyze impacts.

The adverse impacts of energy development, transmission lines in particular, were also acknowledged in the BPA's Business Plan EIS. BPA Business Plan Final Environmental Impact Statement (DOE/EIS-0183) (hereinafter BPA BP EIS). The Whistling Ridge would include transmission lines and analysis of impacts from transmission lines is equally applicable to scenic impacts analysis for industrial wind energy development. The Business Plan EIS stated:

> In areas used for recreation, particularly in undeveloped places, studies show that many users find transmission lines to be an unwelcome visual intrusion. Also, many citizens feel strongly that transmission lines near their homes are visually intrusive, and that some property values may be reduced. Adverse visual effects may be perceived up to several kilometers from the line. Transmission lines may be more compatible with industrial areas. The effectiveness of potential mitigation measures depends on the site, and some measures may substantially increase the cost of the project. Possible measures include darkened towers in

> forested areas; different tower designs more compatible with a particular environment; non-specular (nonshiny) conductor; and locations that avoid visually sensitive areas.

BPA BP EIS at 4-52, Section 4.3.2.6. The Business Plan EIS also explained that one of the main environmental risks of wind energy development is visual impacts. BPA Business Plan EIS at 4-42, Section 4.3.1. The BPA has previously relied on this environmental review when approving interconnections to the grid. How the BPA can acknowledge adverse impacts from transmission lines, but ignore adverse impacts from wind energy facilities, is inexplicable.

3. Views from the Lewis and Clark National Historic Trail would be adversely affected.

The Lewis and Clark National Scenic Trail was created to "stimulate Federal, State, and local agencies and individuals to identify, mark, and preserve for public inspiration and enjoyment the routes traveled by the Lewis and Clark Expedition." Lewis and Clark Trail Management Plan at 1. The Management Plan for the trail recognizes that many of the historic and cultural resources have been altered or lost and the Expedition left scant traces of their passing. However, "In a very real sense, many of the historic resources are the *landmarks*, *vistas*, flora, and fauna that make up the Trail's natural resources. It is virtually impossible to find either historic or natural resources along the Expedition route, which have not been altered in some way by man or nature." Lewis and Clark Trail Management Plan at 4 & 13. Thus, the scenic vistas and natural resources of the Expedition route are critical to appreciating the trail. Locations where those vistas and natural resources are intact are exceedingly rare, and warrant the greatest attention during SEPA and NEPA review.

The Columbia River segment, which includes the portions of the Trail that would be affected by the Whistling Ridge project, was designated for three types of trail development: a water trail, a land trail, and a motor route. The Columbia River, Interstate 84 and Washington

State Route 14 are designated routes. The Management Plan notes that there was a "nearly continuous string of recreation sites along this segment." Lewis and Clark Trail Management Plan at 70. Individual sites within sight of the Whistling Ridge Energy Project include Viento State Park, which is directly across the Columbia River from where the Lewis and Clark Expedition camped on October 29, 1805 and April 13, 1806, and Starvation Creek State Park. L & C Management Plan at 74.

The DEIS fails to acknowledge adverse scenic impacts to the Lewis and Clark National Scenic Trail. Locations along the route with intact scenic vistas that retain some of the same views that the Lewis and Clark Expedition experienced are critical important resources for the trail system. The views from I-84, the Columbia River, Viento State Park, and Starvation Creek State Park are largely intact as evidenced by the Forest Service's resource inventories. The project would dramatically alter these views causing significant adverse impacts to the trail. This conclusion was clearly expressed by the National Park Service in at least two separate letters to the BPA and EFSEC. This conclusion is also supported by the BPA's previous environmental analysis of other projects that would have similar, although less severe, impacts on the Lewis and Clark National Historic Trail. The egregious failure to acknowledge significant adverse impacts to the Lewis and Clark National Historic Trail must be corrected.

D. The DEIS Fails to Adequately Review the Likely Impacts of the Proposed Development on Natural Resources.

The Whistling Ridge project is likely to cause significant adverse impacts to natural resources, including the direct impacts of mortality to wildlife, as well as indirect effects from habitat destruction, displacement, and species avoidance of the project area after construction. Avian species often collide with wind turbines, and bats often die from internal hemorrhaging caused by the massive changes in air pressure near the spinning blades of a wind turbine, a

process known as "barotrauma." Also, components of the industrial development, including collector lines, transfer stations, and access roads, can displace wildlife and fragment habitat. The DEIS failed to adequately analyze the likely impacts to wildlife and other natural resources.

In addition, as demonstrated in the written testimony of Dr. K. Shawn Smallwood (attached herein), the underlying data and environmental analysis relied upon in the DEIS is severely flawed. For example, without any scientific support the DEIS states that the clearcut project area is poor habitat for wildlife. However, Dr. Smallwood points out that "[b]ird species diversity is much greater at Whistling Ridge than at the Altamont Pass, where bird fatalities caused by wind turbines are notoriously high." Whistling Ridge surveys found more than 1 species per hour of searching, whereas surveys at Altamont found 0.036 species per hour. The proponents' ploy to clearcut the land and present a devastated ecosystem immediately before applying for an industrial energy facility is misleading and results in biased conclusions in the DEIS. As Dr. Smallwood concluded, based on independent analysis of the proponent's own surveys, "Whistling Ridge exhibits a very high level of ecological integrity." This is likely a result of the projects locattion within a largely intact ecoregion where species diversity remains high. This is also why the Klickitat County Energy Overlay Zone excluded forested areas.

Dr. Smallwood also points out contradictions between foundational statements and the conclusions in the DEIS. For both Keen's myotis and Townsend's big-eared bat, the DEIS states that the analysts had insufficient knowledge of the species, but nonetheless concluded that it was unlikely that they would occur at the site. DEIS at 3-59–60. It is plainly inappropriate to base conclusions on insufficient information. At best, the DEIS should say that impacts to bat species are unknown and then analyze the worst case scenario given that uncertainty..

The DEIS seriously underestimates the potential impacts of this project, both on an individual basis and when considered cumulatively with other wind energy projects. Dr. Smallwood has determined that the baseline studies to assess impacts were cursory and inadequate, the likely impacts to raptors are significant, the cumulative impacts analysis was biased and unrealistic, and the mitigation measures are inadequate.

The DEIS also failed to ensure the protection of wildlife and has failed to adequately review impacts to natural resources in a number of other ways, as described below.

1. The DEIS Fails to Include Best Available Science in the Analysis.

The avian impacts analysis is inadequate and not based on the Best Available Science. The baseline surveys were too cursory to support a scientifically credible baseline assessment. Failings include an inadequate sample and an inadequate amount of time dedicated to surveys. Avian utilization of a site can vary greatly from year to year, so the limited time span of these baseline surveys introduces large uncertainty into the resulting utilization rates. The sample sizes were grossly inadequate for what is needed for comparing bird utilization among project sites or for guiding wind turbine locations to minimize collision rates. Numerous other methodological errors in the analysis introduce additional biases that undermine the SEPA and NEPA review.

Wildlife surveys should be conducted using current state-of-the-art field and analysis protocol. At the least, surveys must take into account survey bias including, but not limited to, searcher efficiency, carcass "life expectancy" or persistence, and scavenger removal. The entire site should be surveyed before and after construction. Both pre-development survey and post-development monitoring should take into account the episodic nature of some bird migrations and nocturnal bird migrations. For example, long or inappropriately timed intervals between searches may miss a significant avian presence. The DEIS fails to account for these factors.

2. The DEIS Fails to Adequately Consider Displacement Effects on Avian Populations.

The DEIS failed to adequately consider displacement effects on avian populations. Impacts of wind projects on birds are not limited to collisions. When a landscape is industrialized by strings of giant machines, birds and other animals may be driven away rather than killed. And when multiple such strings are concentrated in one area, the impacts on species populations can be substantial. The environmental analysis is incomplete and must be supplemented with specific assessments of cumulative displacement impacts.

3. The DEIS Fails to Ensure Compliance with the Federal Endangered Species Act of 1973 ("ESA"), 16 U.S.C. §§ 1531–1544.

Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." 16 U.S.C. § 1532(19). Section 9 of the ESA prohibits both acts that would "take" a species, as well as acts that would cause an act that constitutes a "taking." The Ninth Circuit has held that "a habitat modification which significantly impairs the breeding and sheltering of a protected species amounts to 'harm' under the ESA." *Marbled Murrelet v. Babbit*, 83 F.3d 1060, 1067 (9th Cir. 1996). The DEIS failed to demonstrate that the project will be in compliance with Section 9 of the ESA.

The DEIS does state that there has been ongoing consultation with U.S. Fish and Wildlife Service. DEIS at 1-20. Pursuant to NEPA regulations the BPA is supposed to perform this consultation requirement "concurrently with and integrated with" preparation of the Draft EIS, not after the Draft EIS is complete. 40 C.F.R. § 1502.25. The results of this consultation process should have been included in the DEIS.

In Section 2.20.2.2 of the Amended Application, the Applicant states that a Biological Assessment will be prepared. The DEIS fails to make good on this promise. BPA and EFSEC

must ensure that a biological assessment is prepared, to better inform the agencies about potential adverse impacts to threatened and endangered species.

4. The DEIS Fails to Ensure Compliance with the Bald Eagle Protection Act, RCW Chapter 77.12, and Regulations Promulgated Pursuant Thereto, Located at WAC 232-12-292.

The DEIS fails to ensure compliance with the state Bald Eagle Protection Act, despite the presence of bald eagles and their habitat within and near the project site. There is no evidence that the Washington Department of Fish and Wildlife has been consulted pursuant to the Bald Eagle Protection regulations.

5. The DEIS Fails to Ensure Compliance with the Federal Bald and Golden Eagle Protection Act, 16 USC § 668–668d.

The DEIS fails to ensure compliance with the federal Bald and Golden Eagle Protection Act ("BGEPA"), again despite the presence of bald eagles and their habitat within and near the project site. The BGEPA prohibits any person, association, partnership or corporation from taking a bald or golden eagle at any time or by any manner without a permit. 16 USC § 668(a). A permit may be issued only if the taking would be compatible with the preservation of the species. *Id.* § 668a.

6. The DEIS Fails to Ensure Compliance with the Federal Migratory Bird Treaty Act, 16 U.S.C. §§ 703–712.

The Migratory Bird Treaty Act ("MBTA") requires that the U.S. Fish and Wildlife Service (USFWS) enforce the MBTA against "any person, association, partnership, or corporation" that "by any means or in any manner," pursues, hunts, takes, captures, kills or attempts to take, capture or kill a migratory bird or any part, nest or eggs of any migratory bird. 16 U.S.C. §§ 703, 707. Under the MBTA, a person may take or kill migratory birds only as permitted under USFWS regulations and based on the USFWS's determination that the take or

kill is compatible with the migratory bird treaties. *Id.* §§ 703, 704. The USFWS's determination must take into account scientific factors such as species abundance and distribution, migratory patterns, and breeding habits, as well as the economic value of birds. Id. § 704. The killing of a single migratory bird is sufficient to create criminal liability. *United States v. Corbin Farm Service*, 444 F.Supp. 510 (E.D. Cal), *aff'd*, 578 F.2d 259 (9th Cir. 1978). The killing of a migratory bird does not need to be intentional and the killing can occur "by any means or in any manner." *United States v. Moon Lake Electric Ass'n, Inc.*, 45 F.Supp. 2d 1070, 1075–79 (D. Col. 1999) (upholding the prosecution of a utility for unintentionally electrocuting and killing seventeen birds). The DEIS fails to ensure compliance with the MBTA.

7. Inadequate review of impacts to northern spotted owl populations.

The DEIS states that construction of the proposed facility will not directly impact spotted owl habitat. However, the DEIS fails to address whether the project will adversely affect dispersal habitat and migration corridors that are essential to sustaining genetic diversity of owl populations. For example, the Columbia River Gorge is a likely crossing location for owls moving north and south between Oregon and Washington. The project could also affect the east-west movement of spotted owls between valleys. The DEIS fails to adequately address whether a major industrial energy facility sited within spotted owl territory will adversely affect the species.

The DEIS also fails to address the permanent loss of forested lands within the White Salmon Spotted Owl Special Emphasis Area (SOSEA). The DEIS claims that the project would meet Washington state standards for the retention of sufficient habitat within the SOSEA, but it does not adequately review the impacts of *permanently* converting forest land to an industrial

use, and how that permanent conversion would affect the longterm viability of spotted owl habitat within the SOSEA.

8. Failure to demonstrate sufficient protections for non-avian wildlife and insects.

The application and threshold determination fail to demonstrate sufficient protections for sensitive and rare wildlife species, including a number of sensitive and rare species that the application notes have been observed within the project site. The DEIS also fails to evaluate potential impacts on insects such as butterflies. Here, the impacts are typically not from direct turbine strikes, but rather from habitat disruption or destruction. There are several species of butterflies of particular concern in this area, particularly the rare Western Oak Dusky Wing (*Propertius duskywing*).

9. The DEIS fails to include adequate mitigation measures.

The decisions fail to include adequate mitigation measures to protect wildlife. For example, the DEIS include discussion relating to future surveying for wildlife impacts, but fail to include any conditions that would require any concrete actions in response to actual wildlife impacts.

10. The DEIS misrepesents the climate change and air quality impacts of the project and of the no-action alternative.

The DEIS repeatedly asserts that if the Whistling Ridge Energy Project is not built, then adverse impacts to climate change and air quality would necessarily result. For example, the DEIS states that "[i]f the No Action Alternative is selected, the growing electricity needs of the region would continue to be met through a combination of other renewable development and a combination of additional fossil fuels." DEIS at 3-21–3-22. This completely false dilemma, in various forms, is repeated throughout the DEIS without any factual support.

In fact, the regional energy system will reduce greenhouse gas emissions and air pollutants regardless of whether this individual project is built, and primarily through conservation measures. The Northwest Power Planning Council's Sixth Power Plan, which will dictate the portfolio of energy production sources for the foreseeable future, has planned to meet 85% of new demand with conservation and efficiency measures over the next 20 years. Sixth Northwest Power Plan Overview at 1. The remaining 15% of new demand would be met with renewables. Notably, this would be achieved even while the Boardman coal-fired power plant is taken offline by 2020.

The Bright Future Report also provides some broader context for the supply and demand aspects of the regional energy grid. Bright Future Report, NW Energy Coalitions, Original Edition, March 2009 – Update 1, July 2009. The Bright Future Report analyzes how the region will meet its energy needs through 2050, factoring in the loss of the Boardman coal-fired power plant, the removal or reduced use of hydropower projects on the lower Snake River, and picking up that lost energy supply through conservation, efficiency, and clean new sources of energy. The Report's bottom line conclusions are that "[t]he region has enough renewable potential to more than meet all current and future power needs" and that the potential for affordable clean energy "[d]warfs" the need. Bright Future Update at 14, 15. Thus, foregoing the 21 average MW of production capacity that would result if the Whistling Ridge project is not constructed would be essentially irrelevant to the overall supply of alternative energy. Furthermore, there is absolutely no evidence in the record showing that the alternative to this particular wind project is continued use of fossil-fuel generation sources or new fossil-fuel generation sources. The real choice is between this particular wind facility and siting other wind facilities in alternative locations with fewer environmental impacts.

Thus, it is inappropriate for the DEIS to compare the likely impacts of a wind energy development to the impacts of fossil-fuel generation sources. The region's climate change goals and air quality goals will be achieved regardless of whether the Whistling Ridge project is constructed. Every statement asserting the false dichotomy between constructing the project and a future with higher carbon emissions and air quality problems must be removed from the DEIS.

E. The DEIS Fails to Adequately Review the Likely Impacts of the Proposed Development on Cultural Resources.

1. The DEIS Fails to Analyze Impacts to Cultural Resources and Fails to Integrate Adequate Consultation with Tribal governments.

The DEIS acknowledges that the BPA has an obligation under Section 106 of the National Historic Preservation Act ("NHPA"), 16 USC 470 et seq., to consult with Tribal governments about the likely impacts of the proposal. DEIS at 4-6. The BPA also explains that the "BPA's 1996 government-to-government agreement with the 13 federally-recognized Native American Tribes of the Columbia basin provides the guidance for the Section 106 consultation process with the Tribes." DEIS at 4-6. The Draft EIS explains that the BPA will conduct formal government-to-government consultation. DEIS at 3-204. The DEIS fails to acknowledge that NEPA regulations also require that the BPA must prepare the Draft EIS "concurrently with and integrated with" the required consultation under the NHPA. 40 C.F.R. § 1502.25(a).

SEPA requires EFSEC to consult with the Yakama Nation as well. Under SEPA, EFSEC is required to consider the likely impacts to cultural resources. "Cultural preservation" is an element of the environment that must be addressed through the SEPA process. WAC 197-11-444. In addition, the environmental checklist, which must be prepared for proposed actions, requires consideration of impacts to cultural resources. WAC 197-11-315; WAC 197-11-960. SEPA also requires that EFSEC consult with agencies with expertise in the impacted

environment. RCW 43.21C.030(2)(d); WAC 197-11-408(2)(a). EFSEC's SEPA regulations also require that EFSEC works with interested agencies throughout the preparation of the DEIS. WAC 463-47-140(5). The Yakama Nation's Cultural Resources Program is an agency with expertise in Yakama Nation cultural resources. Finally, the 1989 Centennial Accord between the State of Washington and federally recognized tribes mandates that EFSEC undertake government-to-government consultation with representatives of the Yakama Nation regarding the measures necessary for adequate environmental review and appropriate mitigation measures.

Based on the above-referenced sources of law, both EFSEC and BPA must engage in direct government-to-government consultation with the Yakama Nation. The BPA has already failed to comply with the NEPA requirements to integrate this consultation into preparation of the DEIS. *See* 40 C.F.R. § 1502.25(a). This consultation should have occurred months ago. Both EFSEC and the BPA have heard testimony from the Yakama Nation explaining that a cultural resources report was submitted in December 2009. There is no legitimate explanation for why this information was not included in the DEIS, which was issued in May 2010, or why government-to-government consultation was not undertaken concurrently with the environmental review process.

Industrial wind energy development in Klickitat County that has proceeded without adequate consultation and review for impacts to cultural resources has led to irreparable harm to cultural resources. This harm is evidenced by a media report in the *Yakima Herald-Republic* on the destruction of cultural resources during the construction of the Windy Point Wind Energy Facility in neighboring Klickitat County, a copy of which is attached hereto. EFSEC and the BPA must not allow this type of mistake to repeat itself. The agencies must perform adequate

consultation, analyze likely impacts, and ensure that Yakama Nation cultural resources would not be adversely impacted by the proposal.

2. The DEIS Fails to Demonstrate Compliance With the National Historic Preservation Act.

The project would be highly visible from the Historic Columbia River Highway ("HCRH" or "Historic Highway"). This invaluable historic treasure, built between 1913 and 1922, was the first road planned as a scenic highway in the United States. Today, the Historic Highway is listed on the National Register of Historic Places, as a Historic District, as a Scenic Byway, and as a National Historic Civil Engineering Landmark by the American Society of Civil Engineers. Even more significantly, the Historic Highway has been designated by the Secretary of the Interior as a National Historic Landmark for its "exceptional value as commemorating or illustrating the history of the United States." More than other historic places on the National Register, National Historic Landmarks are granted special protection against impacts caused by federal action. Indeed, section 110(f) of the National Historic Preservation Act ("NHPA") requires federal agencies to undertake, "to the maximum extent possible," such planning and actions as may be necessary to minimize harm to these properties.

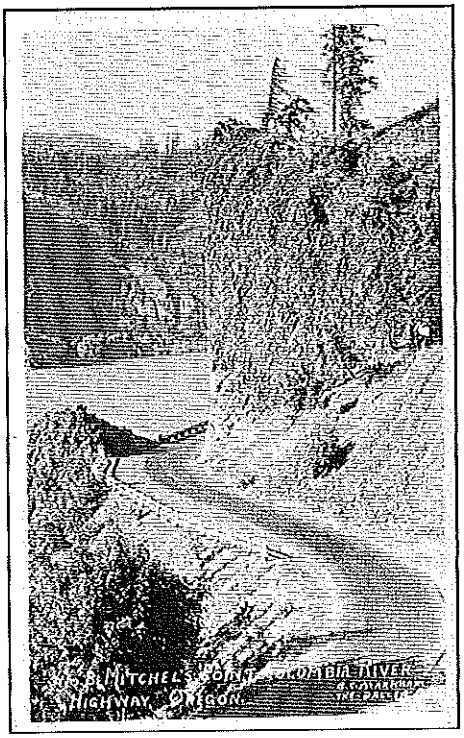
Portions of the Historic Highway are being restored by the Oregon Parks and Recreation Department ("OPRD") and the Oregon Department of Transportation ("ODOT") as part of the Historic Columbia River Highway State Trail. Acting on a 1987 directive by the Oregon Legislature to preserve and restore the Historic Highway, ODOT and OPRD are creating a series of long, narrow parks in the Columbia River Gorge that will be open to pedestrians, bicyclists, children, and people in wheelchairs, and closed to all motor vehicle traffic. More detailed information on the HCRH can be found in the "Historic Columbia River Highway Master Plan: HCRH Segments," a copy of which is attached to these comments.

It is important to note that the BPA is under special obligations with regard to protecting this National Historic Landmark. Section 110(f) of the NHPA provides as follows:

> Prior to the approval of any Federal undertaking which may directly and adversely affect any National Historic Landmark, the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking.

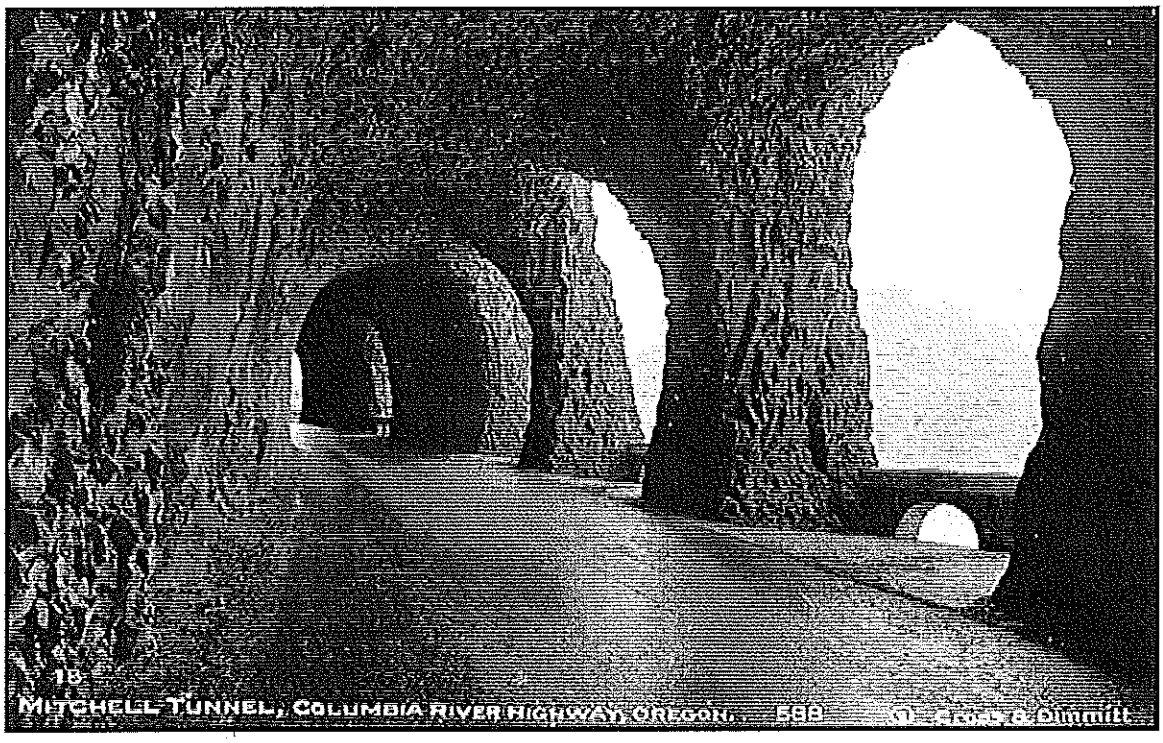
16 U.S.C. § 470h-2(F).

Section 106 of the NHPA and its implementing regulations adopted by the Advisory Council on Historic Preservation entitled "Protection of Historic Properties" (36 C.F.R. Part 800), describe agency responsibilities when an undertaking will affect properties listed in the National Register of Historic Places, including National Historic Landmarks.



The Whistling Ridge project would adversely affect views from the Historic Columbia River Highway. The HCRH was built as a scenic highway. Its historic features include design elements that accentuate views of the remarkable scenic landscapes of the Columbia River Gorge. Curves and pullouts in the HCRH were designed to focus the traveling public's attention on scenic landscapes. The highway includes substantial tunneling in numerous places, with tunnels designed to optimize views. The Mitchell Point Tunnel, known as the "Tunnel of Many Vistas," included multiple windows that presented views of the Columbia River, Underwood Bluff, Dog Mountain, the mouth of the Little White Salmon River,

and the diverse array of vegetative and geologic textures on these landforms. East of Mitchell Point, the HCRH traversed parallel to Underwood Bluff and crosses Ruthton Point, where the curve of the road presents spectacular views of the Columbia River, Underwood Bluff, and Dog Mountain, along with rural pastoral land above Underwood Bluff.



Other important segments of the HCRH include the segment between Starvation Creek and Viento State Park, which have the added importance of being part of the Lewis and Clark National Historic Trail. The HCRH segments from Hood River heading east include the Hood River Loops and the Mark O. Hatfield West Trailhead. This segment also includes spectacular views of the Gorge, particularly Underwood Bluff, Chemewa Hill, and Underwood Mountain to the north and northwest. To the east of the Mark O. Hatfield West Trailhead is the fully restored Hood River to Mosier segment of the HCRH. Several tunnels along this stretch have been reopened, fulfilling the plans of the HCRH Master Plan and setting an example for the ultimate

goal of restoring the entire Highway for recreation and historical interpretation. While the views from the West Trailhead to Mosier become more distant from the project the views are nonetheless highly important to the HCRH. Impacts from these locations are also likely to be high.

While the "Tunnel of Many Vistas" was destroyed during the construction of Interstate 84, segments of the original HCRH are present through this area. The sections that were lost are currently being restored and recreated through ongoing efforts of ODOT, the Oregon State Parks and Recreation Department, and Friends of the Historic Columbia River Highway. The "Tunnel of Many Vistas" will likely be re-created within the next ten years. If the Whistling Ridge Energy Project is constructed, the view from the "Many Vistas" would not include a historically intact landscape. Rather, the vistas would be transformed to include an industrialized skyline with moving parts and flashing lights less than 3 miles away.

The impacts to opportunities for historic interpretation and impacts to this National Historic Landmark were not analyzed in the DEIS. The proposed development would directly impact these views and undermine opportunities for historic interpretation. This constitutes a major adverse impact to the environment that needs to be reviewed and addressed.

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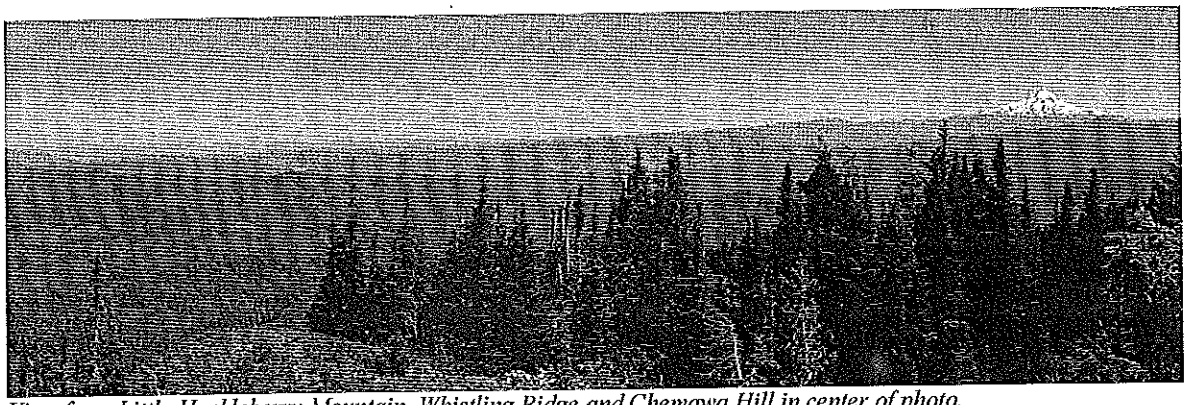
F. The DEIS Fails to Adequately Review the Likely Impacts of the Proposed Development on Recreational Resources.

The DEIS fails to adequately review the likely impacts to recreational resources. The project site is centered within a wide array of significant recreational resources, ranging from internationally recognized landmarks to local hikes with epic views. The DEIS fails to inventory all of the recreation resources in the vicinity and fails to adequately analyze the likely impacts to those resources.

The recreation resources in the vicinity include numerous locations to the south including the Columbia River Gorge National Scenic Area, The Lewis and Clark National Historic Trail, the Oregon Pioneer National Historic Trail, the Ice Age Floods National Historic Trail, the Historic Columbia River Highway Trail, Starvation Creek State Park, Viento State Park, Spring Creek Hatchery State Park, the Columbia River, the Mitchell Point Trail, Indian Head, and hiking along the Lower White Salmon River near the confluence with the Columbia. Locations to the north include the Lower White Salmon Wild and Scenic River, the Little White Salmon River, Nestor Peak, the Little Buck Creek Trail, the Grassy Knoll Trail, Cook Hill, Little Huckleberry Mountain, and numerous other hiking trails and drive-up viewpoints in and near the Gifford Pinchot National Forest. The DEIS fails to adequately inventory these resources.



View from Little Huckleberry Mountain. Whistling Ridge and Chemawa Hill in center of photo. Photo by Jozsef Urmos.

As explained above, the Lewis and Clark National Scenic Trail includes the Columbia River, State Route 14, Interstate 84, Starvation Creek State Park, and Viento State Park. The DEIS fails to acknowledge these components of the National Historic Trail. The DEIS fails to acknowledge that Starvation Creek State Park and Viento State Park also provide river access for wind surfing, kite boarding, motor boating, canoeing and other water activities. The DEIS also fails to acknowledge that the City of Hood River is an international hub for windsurfing and that the project would be visible from multiple windsurfing locations. The DEIS also fails to

recognize that the Little White Salmon River and the White Salmon River are internationally known in whitewater kayaking communities.

The DEIS states that "[o]n the Oregon side of the Columbia River, land use within the Scenic Area is predominately commercial timber production and residential." DEIS at 3-265. This is one of the more absurd errors in the DEIS. The Forest Service owns thousands of acres of public land within the Scenic Area on the Oregon side of the Columbia that is managed to protect natural resources and provide recreation opportunities, not for timber production. The leading land uses on the Oregon side of the Gorge, excluding urban areas, are conservation and recreation.

The DEIS states that "no parks or recreation facilities are planned within a 5-mile radius of the site, either as part of the Skamania County Parks and Recreation Master Plan or the Columbia River Gorge National Scenic Area Management Plan." DEIS at 3-139. This statement is patently wrong and ignores plans to restore and develop facilities at Mitchell Point as part of the Historic Columbia River Highway. While Mitchell Point is already owned by Oregon State Parks, the development proposals are certainly new and warrant acknowledgement.

The DEIS failed to give proper consideration to impacts to recreational resources, including a failure to analyze whether the project would be consistent with the Management Plan for the Lewis and Clark National Historic Trail and the Historic Columbia River Highway Master Plan, or the recreation resource provisions of the CRGNSA Management Plan. While these plans do not have direct regulatory authority over the project (assuming no ground disturbance would occur in the National Scenic Area), the goals and policies could be frustrated by the project. There needs to be at least a discussion of the potential impacts.

Project construction activities would generate traffic delays that would adversely affect recreational users. Countless residents in the gorge hike, windsurf, or kayak every day of the week and use the roads that would be used as a haul route for this project to access these recreational spots. Industrial traffic and associated delays would have an adverse impact on these resources. For example, use of the east access for Cook-Underwood Road for this project would block access to a recreational trail along the White Salmon River. Similarly, the west access for Cook-Underwood Road is regularly used by whitewater kayakers to access the lower three miles of Little White Salmon River, which has achieved legendary status due to the challenging rapids and consistent water flows. By failing to fully acknowledge such impacts and prepare a traffic mitigation plan for public review, EFSEC and the BPA have foreclosed the opportunity to evaluate the project's true impacts and inform the public of these impacts.

Project operation would also affect recreation. The DEIS section that addresses direct impacts of project development fails to mention recreation resources. DEIS at 3-153. Similarly, the cumulative effects section of the DEIS does not identify a single impact to recreational resources. DEIS at 3-279–3-280. The DEIS does acknowledge low to moderate impacts to views, but fails to acknowledge that scenery is typically a central part of outdoor recreation. As stated above, the scenic resource analysis was grossly inadequate.

Recreation resources that were not acknowledged through the scenic resource assessment include Little Huckleberry Mountain, Nestor Peak, and Cook Hill. These hiking areas provide dramatic panoramic views of Mount Hood and Washington's southern Cascades. Impacts to these resources were completely ignored.

The proposed development would be located in the heart of one of the greatest recreational destinations in the world. Windsurfers, kiteboarders, kayakers, and hikers come

from around the world to this area, and the Gorge itself is recognized as a national recreational treasure. Beyond the international and national fame, the area surrounding the project is home to people who hike, boat, bird, view wildflowers, and explore mountains and forests as a primary recreational pursuit. The project would be located in the middle of many of these activities. The recreational impacts analysis warrants substantial revision to reflect the actual impacts to recreational resources.

G. The DEIS Fails to Adequately Analyze the Likely Impacts to Agricultural Tourism.

The DEIS's analysis of potential impacts to agritourism is limited to a superficial comparison to wind energy development that has occurred in area between Walla Walla and Kennewick. DEIS at 3-151. The DEIS merely states that "[w]ind power and winery tourism already co-exist in the Columbia River Area. For example, four wind power facilities are located between Walla Walla and Kennewick (Canyon, Stateline, Vansycle, Combine Hills). This area is home to a thriving wind industry with over 60 wineries." DEIS at 3-151.

The DEIS provides no analysis of whether industrial wind development has caused any adverse impacts to wineries in that area, or whether the landscape and proximity of the two uses is even remotely comparable to the proposed Whistling Ridge project and existing agritourism activities in the area.

For example, the DEIS does not explain how close any of the wind facilities are to the 60 referenced wineries. For Whistling Ridge, the project would be within a mile of existing wineries, would dominate views, and may also be heard. Importantly, the DEIS does not even attempt to quantify the number of agritourism businesses in the Underwood community, nor how close they might be to the proposed Whistling Ridge project.

The DEIS fails to explain how many of the 60 wineries are open to the public, and thus how many support agritourism. Wineries in the Underwood area have tasting rooms and host commercial events.

The DEIS fails to provide any economic data evidencing business trends and property values for the 60 wineries before and after wind energy facilities were constructed in that region. Even if 60 wineries coexist with the wind industry in that region, that does not mean the agritourism industry in that region has not been affected by the wind industry.

In sum, the analysis of potential impacts to agritourism fails to provide any meaningful substantive analysis that can inform decision makers on the likely impacts of the proposed development.

H. The Transportation Impacts Analysis is Inadequate and Must be Revised to Include Alternatives that Avoid and/or Mitigate Impacts to the Underwood Community.

The DEIS must adequately review the likely impacts to the local and regional transportation system. The proposed development would generate thousands of vehicle trips through areas that are predominately used for recreation, agriculture, rural residential, and forest uses. Industrial development and land uses are prohibited in the areas that the proposed haul route would travel through. The transportation impacts would likely be substantial. Impacts would include significant delays due to increased traffic and the size of vehicles associated with the use. The vehicles associated with the proposal would also be incompatible with local uses.

Whistling Ridge would make thousands of vehicular trips across the proposed haul route, including the hauling of heavy construction materials and equipment exceeding the Washington State Department of Transportation's legal load limit of 52.75 tons. *See* RCW 46.44.041. There would be more than 1,700 trips using specialized over-sized trucks designed specifically for the

industrial purpose of hauling the enormous turbine components. These specialized trucks are up to 150 feet long, 17.5 feet high, and 14.5 feet wide. Since October 11, 2007, trucks longer than 125 feet in length have been prohibited on Washington SR-14 along the haul route.

In addition to the specialized trucks, other large and oversized trucks would be needed to haul construction equipment, plus three pilot vehicles for each truck wider than 10 feet, and construction worker vehicles. Although WRE has not yet proposed a total number for all vehicular trips along the haul route, the total number would likely exceed 10,000 trips. The specialized trucks and their frequent, heavy loads are expected to damage the roads along the haul route. Thus, WRE proposes to repair road damage resulting from the industrial hauling.

This massive intrusion of industrial construction equipment would run through rural residential, agricultural, and recreational areas. Given the impact to the community, EFSEC and the BPA should study alternative routes that would preclude or minimize the use of Cook-Underwood Road as it runs through the National Scenic Area.

In addition, the DEIS provides internally inconsistent information about the true extent of the traffic impact. At pages 1-29 and 3-233, the DEIS states that traffic flow could be restricted for up to 20 minutes during the construction phase. But at page 3-228, the DEIS states that traffic delays would increase by only six seconds as a result of this project. The agencies should explain the inconsistency.

I. The DEIS Fails to Adequately Analyze and Address the Potential Health Impacts from Wind Energy Facility Operation.

The nearest residence would be within one-half mile of the proposed facility. Numerous other residences would be in similarly close proximity. EFSEC and BPA must ensure that the DEIS includes adequate review of the likely impacts on neighboring properties.

Recent studies have shown a potential for wind energy facilities to cause adverse impacts to human health. Adverse health impacts could occur from low-frequency noise that interferes with inner ear functions resulting in dizziness, nausea, and loss of sleep. While the research is not conclusive, the uncertainty regarding health impacts of wind development warrant a precautionary approach to siting wind facilities near residential structures. The DEIS should include analysis of a variety of sources on the health impacts of wind energy development. EFSEC and the BPA should require that the facility be set back at least 1 mile from the nearest residence.

Friends also incorporates the comments of Keith Brown and Teresa Robbins regarding the potential noise and human health impacts of the proposed project.

CONCLUSION

The Draft Environmental Impact Statement for the Whistling Ridge Energy Project is grossly inadequate and fails to comply with the requirements of SEPA, NEPA, and other applicable laws. The DEIS has been heavily influenced by the preferences and biases of the Applicant to rationalize a predetermined outcome, not to provide an impartial and informed analysis of environmental impacts. The flawed document cannot be used as a basis for decision making and must be substantially revised before any conclusions on environmental impacts can be drawn.

The Whistling Ridge Energy Project is easily the most controversial and problematic wind energy facility proposed to date in Washington State. The project would cause significant adverse impacts to unique resources in both Washington and Oregon, including scenic, natural, cultural, and recreational resources. The affected resources include the Columbia River Gorge National Scenic Area, the Historic Columbia River Highway, the Lewis and Clark National

Historic Trail, the Oregon Pioneer National Historic Trail, sensitive wildlife species such as the federally listed northern spotted owl, sensitive Native American cultural resources, and multiple hiking trails and other recreational resources.

Because of these unique factors, the environmental review must be of the highest integrity. Unfortunately, this DEIS fails to take the hard look required by NEPA and SEPA. The DEIS is improperly designed so that the applicant's private economic interests unlawfully dictate the purpose, need, alternatives, and eventual outcome for the proposed action. The DEIS does not demonstrate that EFSEC and BPA consulted with agencies with expertise in the resources that would be affected by the project. The DEIS also misquotes and misrepresents the language and meaning of the Columbia River Gorge National Scenic Area Act, and prematurely and erroneously concludes that the project would be consistent with the applicable land use regulations. Finally, the DEIS fails to adequately evaluate the direct, indirect, and cumulative impacts of the proposed project.

The DEIS is so deficient that it cannot be used as the basis for a decision on the project. The proposed project should be denied outright, but if it is to be given further consideration, a supplemental or revised DEIS is required.